EFFECTIVE MANAGEMENT CONTROLS

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INPUT provides planning information, analysis, and recommendations to managers and executives in the information processing industries. Through market research, technology forecasting, and competitive analysis, INPUT supports client management in making informed decisions. Continuing services are provided to users and vendors of computers, communicatio... and services.

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INPUT   Planning Services for Management

EFFECTIVE MANAGEMENT CONTROLS

.

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EFFECTIVE MANAGEMENT CONTROLS

CONTENTS

- ii -

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EFFECTIVE MANAGEMENT CONTROLS

EXHIBITS

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I INTRODUCTION

I   INTRODUCTION

A.   PURPOSE AND SCOPE

- This study is produced by INPUT as part of the Information Services Industry Program (ISIP). It incorporates the topic of expense and profitability distributions. In addition, it discusses the related and more strategic issues of the nature and scope of effective management controls.

- Companies in fast-growth industries such as information services often experience disappointing results due to the lack of control rather than the lack of a market or products.

    - In spite of this, management seldom thinks consciously about this vital process.

    - Managers will frequently address the symptoms of a control problem rather than devote time and resources to curing it.

- Very little research on this topic is available to information services vendors. INPUT's goal is to provide clients with information gained directly from industry executives so that they can compare their experiences with their peers' and benefit from their observations and experiences.

- 1 -

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- The study examines the management control process of information services organizations and the control techniques used by the executives.

    - Management attitudes toward their organizations and control systems are analyzed.

    - The detailed items of information used in the control process were determined and used to rate the importance executives place on various organization functions and on the controls themselves.

    - The effectiveness of different sources of control information is analyzed for use as a source of operating information as well as for early warnings of potential problems.

- The control process is defined as the process of measuring progress or results against predefined standards, evaluating the findings to determine the causes and cures, and deciding which course of action to take.

    - The control process is preceded by planning and budgeting to establish the standards and other bases for control.

    - It is followed by management action.

- Research for this study was structured to determine:

    - Correlations between organization size, delivery mode, or success with management attitudes and use of controls.

    - How typical information services organizations are controlled.

    - The adequacy of control systems.

    - The importance of individual control items.

- 2 -

- The subject of management control is a difficult one because of the many interpretations of the composition and extent of the process. One thesis of this study was that management control is a highly individualized function and varies widely.

  - It is influenced by high level goals and directives and, to some extent, by accounting and management reporting systems.

  - The greatest individualizing influence results from the way the manager interprets the goals set for him, the actions he takes to reach them, and the tools he uses.

  - Multiple interviews within the same company were held to test this thesis.

  - Side-by-side comparisons of the responses showed no more common- ality than would be found in comparisons with other respondents.

  - They even showed markedly different responses to common issues such as the adequacy of controls and areas for improvements.

  - These results demonstrate very clearly that the individual manager is the key element in shaping the control process.

- A broad range of organizations was interviewed to insure a rich mixture of respondent observations and to acquire a substantial number of data items covering all key aspects of the industry.

- Six subject areas were examined:

  - Organization responsibilities.

  - Expense distributions.

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EXHIBIT I-1

- 4 -

TYPES OF ORGANIZATIONS INTERVIEWED

ORGANIZATION'S DELIVERY MODE	NUMBER OF ORGANIZATIONS INTERVIEWED
Software Products	8
Processing Services	7
Professional Services	7
Integrated Systems	4
Hybrid	4
Total	30

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- Sources of information.

- Status and future directions of control systems.

- The manager's impact on performance.

- Key controls.

- Thirty organizations were interviewed. A list of the companies interviewed can be found in Appendix B, "Data Base." The distribution by delivery mode is shown in Exhibit I-1.

  - The delivery mode classification refers only to the organization interviewed; that is, an interview with the software division of a large firm offering multiple products and services would be considered software even though the parent company would be classified as another type.

  - The hybrid delivery mode was added to accommodate organizations with multiple delivery modes where the minor or lesser revenue products were within 25% of the primary delivery mode.

  - The intent of this segregation was to avoid mixing data by classifying an organization as one type even though a significant share of its management resources were also devoted to other delivery modes.

- For some analyses and discussions, respondent organizations were classified by success trend, which refers to the direction of the organization's profitability over the past three years.

- Profitability trend was chosen over absolute profits because it is a better measurement of success.

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- Judging an organization's success by a single year's data may not be valid if the year were unusual in some way. The use of trends also normalizes the data and allows comparisons to be made regardless of the size of the organization and its profits.

- Trends also allowed the analysis of diverse organizations as found in this study. Absolute comparisons of profitability were not possible because some respondent organizations were corporations while others were subunits of corporations. The use of trends allowed comparisons to be made whether the units of profitability were in profit or profit contribution.

- Respondent organizations are grouped as Type A, B, or C.

  - Type A - shows upward trend of greater than 20% profit increase per year.

  - Type B - shows a level trend of less than 20% profit deviation per year.

  - Type C - shows downward trend of greater than 20% profit decrease per year.

- This research focuses on organizations within the annual revenue range of $1 to $34 million.

  - "Organization" is used throughout this report for consistency. Some of the organizations were, in fact, companies, but the single, descriptive term will be used to avoid confusion.

  - This allows inclusion of organizations large enough to have established, formal control systems, but not so large that the manager would be out of touch with operating level details.

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- Since research for this report focused on management controls, the person selected for the interview had to have direct or line management responsibilities. Other interviewee criteria were:

    - Profit and loss responsibilities.

    - Responsibility for multiple organizations, one of which was directly related to revenue production such as sales or marketing.

- The respondent profile is shown in Exhibit I-2.

B. METHODOLOGY

- Companies were selected at random from industry lists. An attempt was made to balance the number of respondents by delivery modes.

- Interviews were conducted by telephone with the executives responsible for each organization. In a number of cases, it was also necessary to interview the organization controller to obtain the financial data and expense distributions.

- A basic list was compiled of the control items that might be used by respondents. This list is included in the questionnaire shown in Appendix D.

    - Respondents were questioned about the items on the basic list and then asked about other controls they considered important. These items are shown in Appendix B, "Data Base," Section C, "Respondent-Added Control Items."

    - The list grew to over 140 items. (It was not possible to query all respondents on all items).

- 7 -

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EXHIBIT I-2

RESPONDENT PROFILE

RESPONSIBILITIES	RANGE
Revenues	$1.8-34 million
Employees	25-480
Organization Types	Division - Corporation
Delivery Modes	1-4

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- The large number of control items necessitated grouping into classes for discussion and display. Readers who desire the individual control-item-level detail are referred to Appendix B, "Data Base," and Section C, "Respondent-Added Control Items."

- The "Mean Responses" list, Appendix B, "Data Base," Section D, shows the average response for every item and is coded with the item number for comparison with the questionnaire or added-item list. In some instances the sample sizes were small and may not be statistically valid, but they may be used for comparisons or as indicators. Where this is the case, it has been noted in the text.

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II EXECUTIVE SUMMARY

A. KEY FINDINGS

- Although the management control process is an extremely important one, many executives do not devote much conscious thought to it.

  - Many aspects of the control process become finely tuned to the style and personality of the executive in charge.

  - The executive's shaping influence became very clear when analyzing the report data and was conclusively demonstrated when executive peers within the same company were interviewed.

  - It appeared that many respondents did not appreciate their role in shaping the control system so that it responds to their needs. They spoke of system problems and inadequacies in a detached way as though the control system has some stand-alone purpose rather than being an integral part of their management process.

  - Many executives appear resigned to their control system problems even though the system exists for them and they have the power to change it.

- II -

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- Respondent executives ranked the organizations reporting to them according to their importance to their business unit, as shown in Exhibit II-1.

    - Sales' ranking as number one in the short term is expected, but there was a wide difference of opinions over the others.

    - Development received a high number of mentions as the second most important organization in the short term, which is surprising because of its long-term effect. This may indicate that a number of the respondents are in a catch-up mode.

    - Development, marketing, and support were all very closely ranked on the short term, showing mixed goals among the respondents.

    - The ranking of development over marketing for both the short and long term raises serious questions concerning the role of marketing in many organizations.

- A number of respondents ranked development and marketing highly but later expressed serious problems in understanding and managing both functions.

    - This failure to balance control with needs was observed in a number of instances throughout the research.

    - It apparently is not an isolated problem; it may have serious long-term effects on organizational viability.

- The frequency of use of control items by organization area is shown in Exhibit II-2. The results shown here are very inconsistent when compared to the organization importance in Exhibit II-1.

- Even though development was singled out as the most difficult organization to control, it showed a low level of control item use.

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EXHIBIT II-1

RESPONDENT RANKING OF MOST IMPORTANT ORGANIZATIONS

IMPORTANCE RANKING	SHORT TERM	LONG TERM
#1	Sales	Development
#2	Development	Marketing
#3	Marketing	Sales
#4	Support	Support

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EXHIBIT II-2

- 14 -

USE OF CONTROL ITEMS BY FUNCTIONAL AREA

FUNCTION	PERCENT OF TOTAL CONTROL ITEMS USED
Sales	36
General and Administrative	22
All Others	15
Support	14
Marketing	13

0   10   20   30   40%

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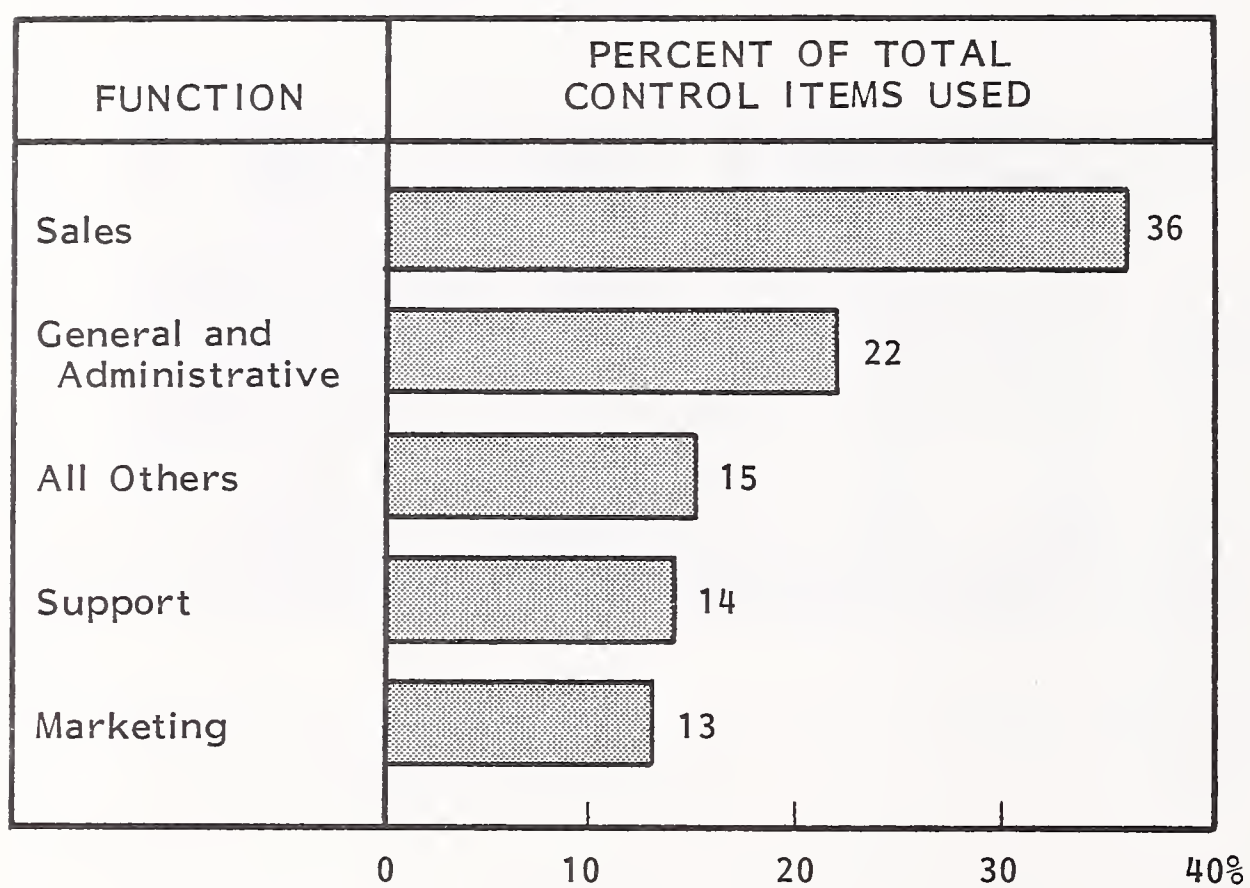
- A very small number of control items were used by respondents for either development or marketing.

- Given the importance of these areas, the relative lack of controls, and the ranking of the most difficult organizations to manage, there is a strong need for more controls to be established.

● The distribution of expenses displayed a wide variance, as shown in Exhibit II-3.

- No significant trends were detected due to company size or delivery mode.

- But organizations with higher levels of spending on sales, marketing, and support had higher levels of revenue productivity (measured on a per-employee basis).

● Expense distributions are highly dependent on each organization's situation, such as market position, product position, long-term goals, management philosophy, and numerous other factors.

- It is virtually impossible to tell the delivery mode of an organization simply by looking at its expense distribution. This is a key point to remember when using another organization's expense distributions for comparison. The organizations must be in very similar situations for comparisons to be meaningful.

- More meaning may be gained from analyzing expense distributions to estimate an organization's present condition, its direction, and its management's driving philosophy.

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EXHIBIT II-3

EXPENSE DISTRIBUTIONS

EXPENSE CATEGORY	PERCENT OF REVENUES
Sales, Marketing, and Support	12 ▨ 28.1 ▨ 50
Computer Operations	5 ▨ 12.6 ▨ 19
Product Development	8 ▨ 16.3 ▨ 30
General and Administrative	2 ▨ 9.7 ▨ 15

0   10   20   30   40   50   60%

Minimum   Average   Maximum

Reported Expenditures

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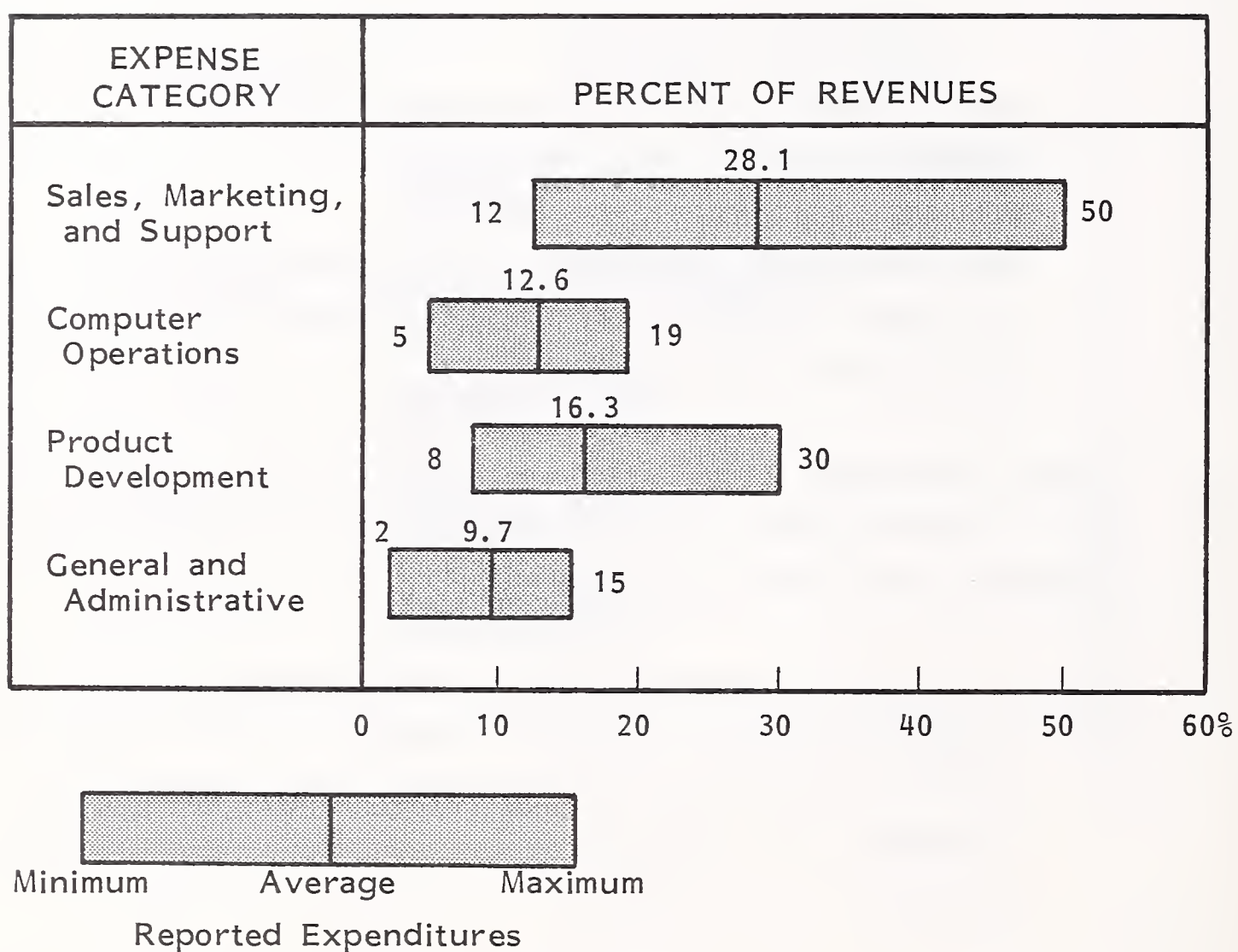
- The importance ratings of some groups of control items were selected to illustrate the relative importance of classes of information; they are shown in Exhibit II-4.

    - Sales, revenue, and profit-related items were the most important, but marketing promotion, usually a high-expense item, was not.

    - In general, the highest ratings were given to historical data items that display current results, and lower ratings were given to more forward looking control items such as sales forecasts or cash flow projections. Fewer than 10% of the control items listed by respondents dealt with forecasts or projections.

- Numerous respondents reported problems within their computer-generated financial reports. Many executives receive unchanged or slightly reformatted accounting reports as control information. A number complained of a wide range of problems from late reports due to accounting close schedules to indecipherable reports.

- Control systems are an area of concern to most respondents, as shown in Exhibit II-5, where only 27% rated their systems satisfactory. This result might not be unusual except that it comes from information services industry executives - a number of whom sell reporting systems and services.

- Control systems are an extremely important area for companies in this industry. Overlooking the systems and the needs of the executives or subordinating them to staff functions can be very costly in terms of resources diverted to acquire usable information and increased decision-making risk due to inadequate information.

- Expense distributions indicate how an organization is being directed, and the executive's financial incentives indicate how he is directed. Financial incentives also reflect the corporation's long-term philosophy. As shown in Exhibit

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EXHIBIT II-4

IMPORTANCE OF SELECTED CONTROLS

Control	Importance Rating
Cash Flow	9.6
Profits	9.2
Development Schedules	9.2
Sales Prospects	9.0
Customer Data	8.5
Orders and Revenues	8.3
Promotional Effectiveness	6.7

0 1 2 3 4 5 6 7 8 9 10
Unimportant   Vital

Importance Rating

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EXHIBIT II-5

- 19 -

CONTROL SYSTEM IMPROVEMENTS

	Percent of Responses
System Changes	40
Change Input	27
Change Output	27
Satisfactory As Is	27

Percent of Responses

0   10   20   30   40   50%
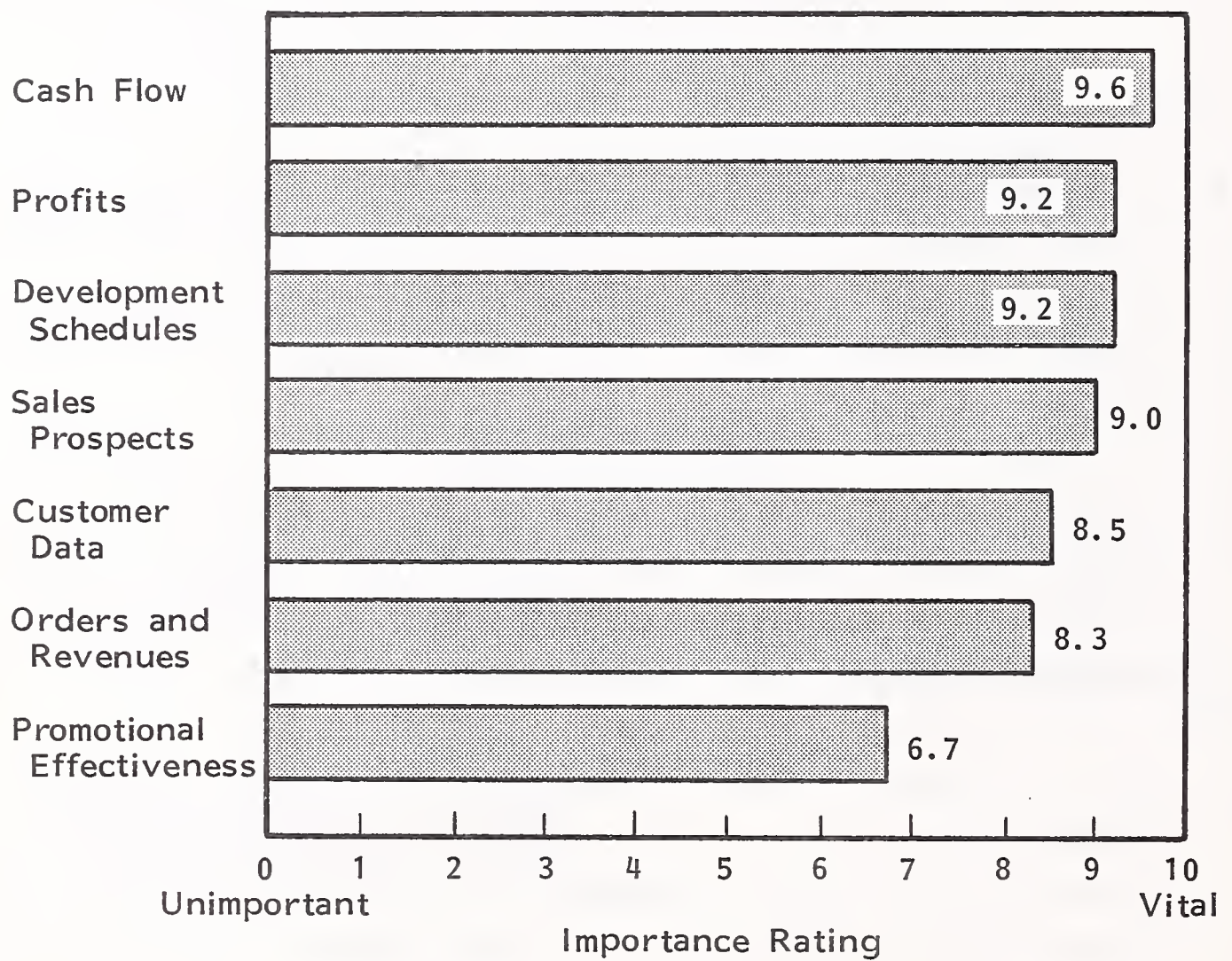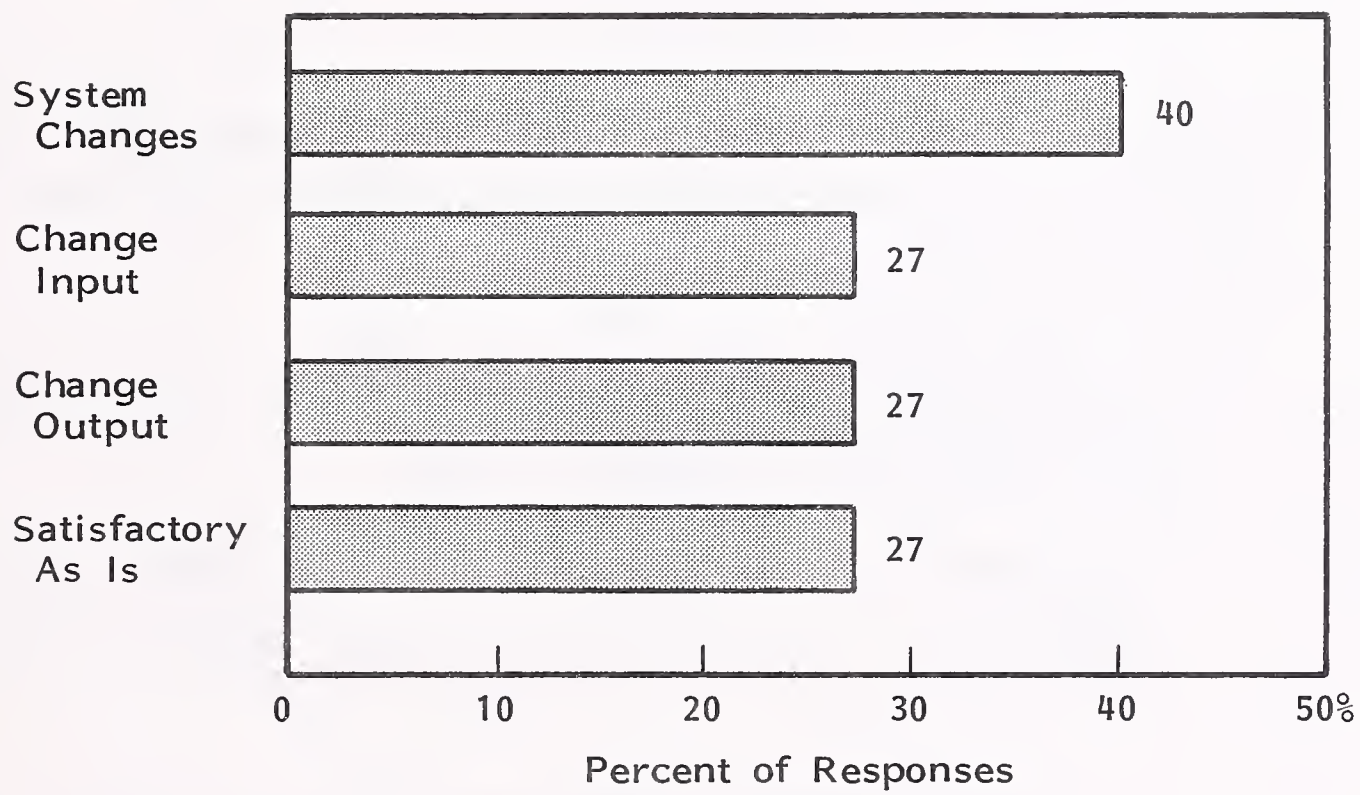
Percentages total more than 100% due to multiple responses by some respondents.

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II-6, most respondents are compensated on short-term-oriented measures only. All were compensated on profit, while 73% were compensated on profit only or profit plus other short-term items such as revenue.

- Only 27% of the respondents were measured on profit plus factors to encourage long-term thinking, such as product or market activities. This indicates a surprising lack of regard for the long-term risks posed by overemphasis on short-term results.

B.   RECOMMENDATIONS

- Executives must take the time to analyze their situation, identify factors critical to success, decide how they can be tracked, and then take steps to optimize the control process.

    - They must regard controls as an integral part of the management process and think consciously about them.

    - The control system must be considered an important tool and must be tailored to fit the executive's personal style for maximum effectiveness.

    - The complex interactions of forces from the corporation, executives, support systems, products, and markets can cause undesirable results if management controls are not carefully defined and consistently used.

- Vendors must keep in mind the high degree of variability associated with management controls when dealing with this area. Awareness of the potential for wide variances is essential in keeping observations and interpretations in their proper context.

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EXHIBIT II-6

EXECUTIVES' FINANCIAL INCENTIVES

Short-Term Incentives Only
(Revenues/Profits)
73%

Profit Plus
One Other
(26%)

Profit
Only
(34%)

Profit Plus
Two or More
Others
(13%)

Profit
Plus Product
or Market
(27%)

Short- and Long-Term
Incentives
27%

Percent of Respondents

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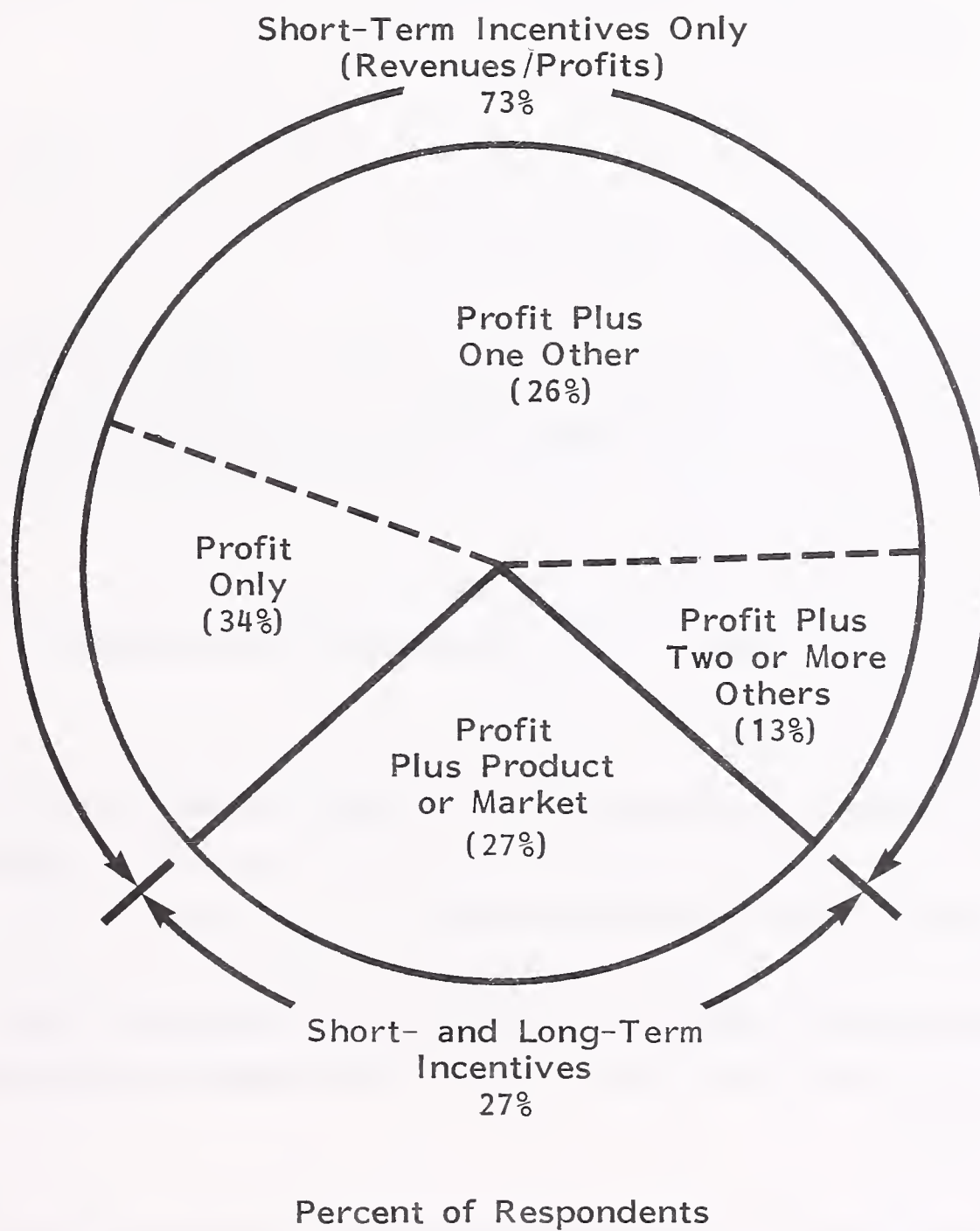
- A manager's goals should determine the relative importance of the organizations under him. If these two factors are not in accord, the goals either will not be met or will be met at a high future price.

  - Managers must insure that the ranking of their organizations is based on an objective appraisal of how the organizations fit their goals and priorities.

  - A misfit between the two may indicate a harmful avoidance of a difficult problem or a leaning toward more comfortable situations, both of which must be avoided for success.

- A lack of balance between the need for and the existence of controls may be identified by the discrepancies between an executive's ratings of the importance of organizations, his difficulty controlling them, and the corresponding number of controls used.

  - Additional controls must be developed for organizations considered hard to manage.

  - Executives should regularly assess how well their priorities, activities, and controls are balanced so that minor, less painful adjustments can be made to keep them on track.

- Another balance which must be closely monitored by executives is the one between detailed, historical information and forward-looking information used in control.

- An inspection of the data items used regularly will indicate if the mix of time perspectives is consistent with the organization's goals and charter; if not, it must be corrected quickly.

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- The true cost of the inefficiencies and misdirections imposed by inadequate reporting and information systems must be determined.

    - It is not an easy task, but attacking it should be the goal of every executive interested in greater organization effectiveness.

    - The conflict between an individual manager's needs for flexibility and the inflexibility of most information systems must be resolved in favor of the manager.

- Executives should pay close attention to the incentives they establish for their subordinates and insure that they are structured to complement the goals of the organization. A balance in incentives must be struck between short-term results and long-term viability, a balance which depends on management striving for the same goals.

    - Incentives should be objective wherever possible to keep the measurement criteria clear and to avoid confusion.

    - A minimum number of incentives should be used to keep the plan easy to administer and to avoid misunderstandings regarding priorities.

- INPUT strongly recommends that a greater emphasis be placed on planning, forecasting, and other forward-looking activities and that establishment of more future-oriented control items be made a high priority to meet the complex challenges of the 1980s.

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III ORGANIZATION AND EXPENSE ISSUES

III ORGANIZATION AND EXPENSE ISSUES

A. INTRODUCTION

- The purpose of this chapter is to begin a broad analysis of management controls by looking at the respondents' responsibilities, priorities, and problems. Later chapters carry the analysis into more detail.

- This chapter addresses three aspects of the control situation:

    - Responsibilities as defined by organization size, various revenue-related measures, and compensation incentives. The latter helps clarify the executive's responsibilities and focus.

    - The manager's perception of the importance of his individual organizations and his stated difficulty in controlling them.

    - The scope of the manager's control requirements and their composition as indicated by the distribution of expenses.

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B. ORGANIZATION ISSUES

I. RESPONSIBILITIES

- All respondents except one had revenue responsibilities either directly, through line control of the sales organization, or indirectly, through control over marketing.

- Other responsibilities covered the spectrum of organizations from single-function groups, such as development, to multifunction units, such as divisions and profit-and-loss (P&L) centers.

- The average respondent had five organizations reporting to him. The range was from three to eleven organizations.

- Respondent organizations were divided into three class sizes for purposes of analysis. The three classes and their attributes are shown in Exhibit III-1.

- Number of employees was selected as the primary measure of organization size because it correlates with organization structure and management activities.

- Organization revenues can be a useful secondary measure but must be used carefully when dealing with organizations as opposed to complete structures such as corporations.

    - Revenue responsibilities of an organization may be defined in a number of ways ranging from simply producing the revenue (sales), to full support of the revenue activities (customer support and operations), to organization support (administration, planning, facilities, etc.).

- 26 -

EXHIBIT III-1

- 27 -

DISTRIBUTION OF ORGANIZATION SIZES

SIZE CLASS	PERCENT OF RESPONDENTS	RESPONDENT EMPLOYEES		RESPONDENT REVENUES*	
		RANGE	AVERAGE	RANGE	AVERAGE
Small (≤ 125 Employees)	33%	25-125	86	$1.8-24	$ 8.5
Medium (126-250 Employees)	47	140-250	196	$7.5-34	18.7
Large (> 250 Employees)	20	287-480	371	$15.5-32	24.9

* Annual revenues in $ millions

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- Revenue can also be misleading due to the tremendous differences in revenue productivity across various organizations and delivery modes.

- Revenue productivity on a per-employee basis is shown in Exhibit III-2. This table contains the combined data of all respondents to this survey; this includes entire companies and P&L organizations.

- The average productivities have been broken out into two categories, companies only and P&L units only, to provide clients with different bases for comparison. Productivity for entire companies is lower than the individual P&L units because of corporate overhead functions.

- The value of offering a proprietary or value-added product is clear from Exhibit III-2, where software products and integrated systems show the highest productivities. The lack of product differentiation found in many services offerings results in a more competitive environment, lower prices, and hence lower revenue productivity.

- Revenue productivity can be used to compare one's organization with others in a similar market segment, but a more meaningful use is as a barometer of organization efficiency.

- Another approximate measurement of responsibilities is the number of revenue streams a manager is responsible for when a stream is defined as a revenue flow from a single delivery mode.

- Fifty-seven percent of the respondents reported responsibility for only one revenue stream greater than 10% of total revenue; that is, they had only one primary revenue source (one delivery mode) and, if there were other revenue sources, none exceeded 10% of total organization revenues.

- The number of revenue streams increases rapidly when the minimum level used is 5%, as shown in Exhibit III-3. Thirty-seven percent of the respondents

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EXHIBIT III-2

- 29 -

REVENUE PRODUCTIVITY PER EMPLOYEE

DELIVERY MODE	ALL RESPONDENTS		COMPANIES ONLY	P&L UNITS ONLY
	AVERAGE	RANGE	AVERAGE	AVERAGE
Software Products	$113	$51-240	85	149
Processing Services	77	$50-107	67	79
Integrated Systems	119	$80-167	119	167
Professional Services	63	$48-100	56	77

NOTE: Average and range of revenues in $ thousands of annual revenues per employee.

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EXHIBIT III-3

- 30 -

REVENUE STREAMS PER ORGANIZATION

NUMBER OF REVENUE STREAMS	PERCENT OF RESPONDENTS	
	≥ 5% OF TOTAL REVENUES	>10% OF TOTAL REVENUES
1	33%	57%
2	30	40
3	37	3

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reported three revenue streams equal to or greater than 5% of their total revenue.

- Since only 3% reported three streams greater than 10%, this means that 34% of the respondents have at least one revenue stream between 5% and 10%.

- Multiple revenue streams have both good and bad aspects which can be over-looked in the press of business.

    - Managing a small revenue stream can divert precious management resources away from the main revenue streams where they can produce the most profit.

    - Managing multiple, major streams becomes the same as running separate businesses and makes them ideal candidates for reorganization into profit-and-loss centers.

    - Small revenue streams can use a disproportionate amount of manage-ment resources. If they have not settled out to requiring a propor-tionate share of revenues in a reasonable time, they should be closely examined.

    - Managers should also examine the purpose for small revenue streams and realistically appraise their contribution to the overall organization. Many times low-revenue products or services are perpet-uated for no good reason, and the organization would be better off without them.

- Financial incentives, the last item used to describe the respondents' responsi-bilities, deals with how managers are measured and rewarded for fulfilling their responsibilities.

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- All of the respondents were selected for this survey on the basis of having profit responsibility.

  - As shown in Exhibit III-4, 30% of the respondents are rewarded on profit alone, while the remaining 70% are rewarded on profit plus one or more other items.

  - Only 14% reported more complex incentive programs of four or more items.

  - One respondent reported compensation for a total of nine objective measures.

- The incentive categories are shown in Exhibit III-5.

  - All respondents are compensated on profit or margin performance.

  - Only 43% reported revenue-related incentives, one-third of which were revenue growth as compared to revenue plan achievement.

- Thirty percent of the respondents reported incentives based upon a number of objective measures such as:

  - Specific product goals.

  - Inventories.

  - Receivables.

  - Business backlog.

  - Prospect pipeline.

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EXHIBIT III-4

NUMBER OF FINANCIAL INCENTIVES

Percent of Respondents

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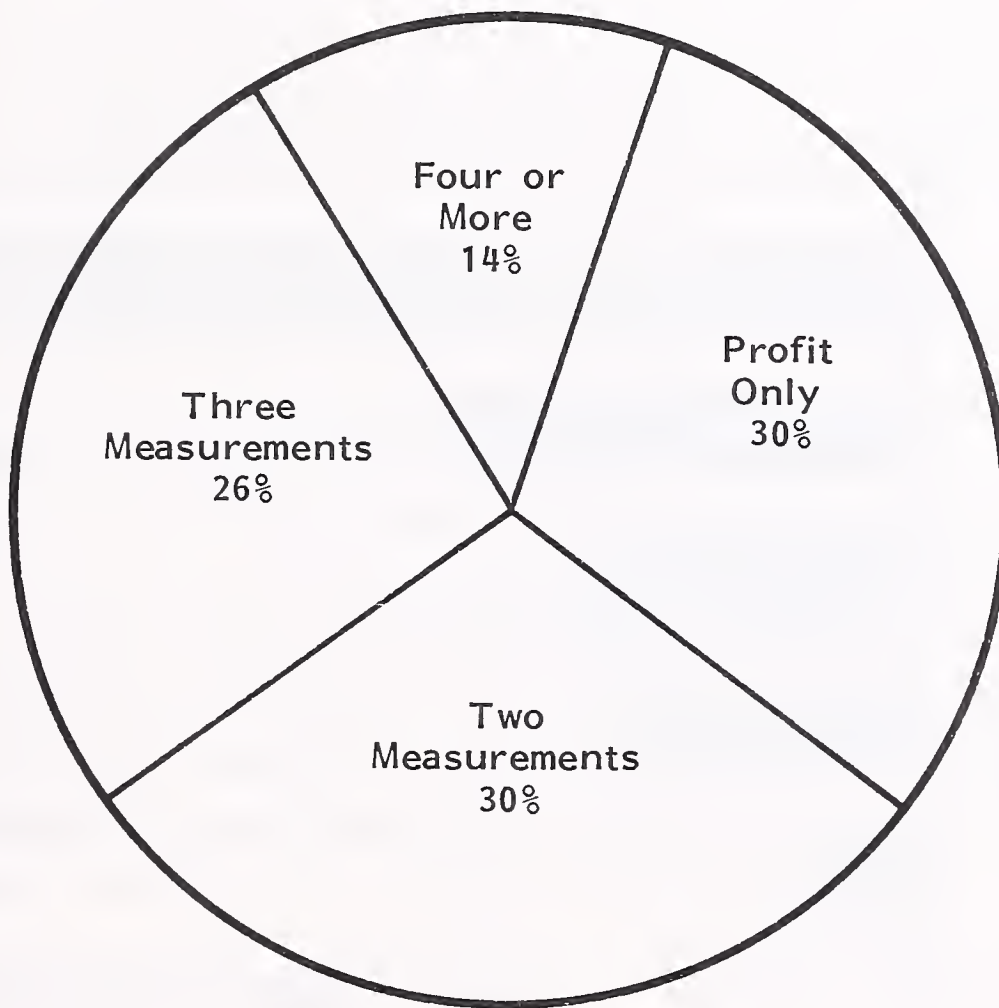
EXHIBIT III-5

RESPONDENTS' PERSONAL FINANCIAL INCENTIVES

INCENTIVES	PERCENT OF RESPONDENTS
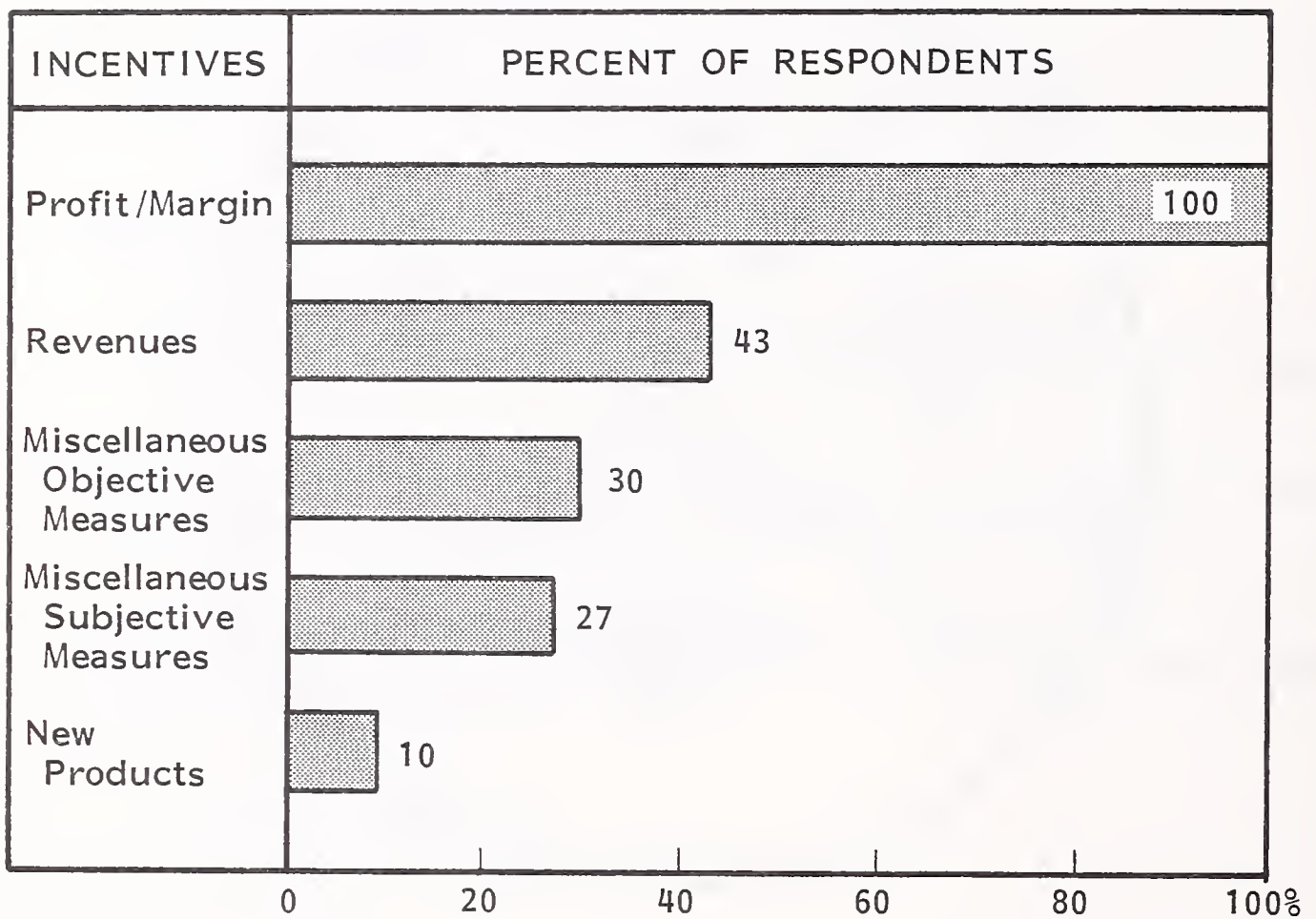
NOTE: Will total to more than 100% due to some respondents reporting multiple incentives.

- Market share.

- Orders.

- Return on assets.

- About the same number reported subjective incentives including:

  - New markets.

  - Level of service.

  - Client satisfaction.

- Ten percent of the respondent companies are taking a longer view by compensating their executives for new product activities, including development schedule performance, number of product enhancements, and new products.

- It is INPUT's opinion that a well-balanced incentive program is critical to an organization's long-term success. Managers must insure that the compensation programs established for them and their subordinates are in harmony with corporate and organization goals. Otherwise, there may be serious problems in the future due to overemphasis on short-term results.

2. ORGANIZATION IMPORTANCE

- Respondents were asked to rank, on both a short- and a long-term basis, the relative importance of the different organizations reporting to them. This was done to provide bases for client comparisons and for analysis of impact on organization performance.

- Sales was mentioned as an important organization on a short-term basis in 30% of the mentions, as shown in Exhibit III-6. It is clearly seen as the most important short-term organization.

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EXHIBIT III-6

MOST IMPORTANT ORGANIZATIONS -
OVERALL RATINGS

ORGANIZATION	PERCENT OF TOTAL RESPONDENT MENTIONS
Sales	Short Term: 30, Long Term: 19
Development	Short Term: 20, Long Term: 30
Marketing	Short Term: 18, Long Term: 23
Support	Short Term: 16, Long Term: 16
Miscellaneous Other	Short Term: 16, Long Term: 12

0   10   20   30   40   50%

☐ Short Term

▨ Long Term

- 36 -

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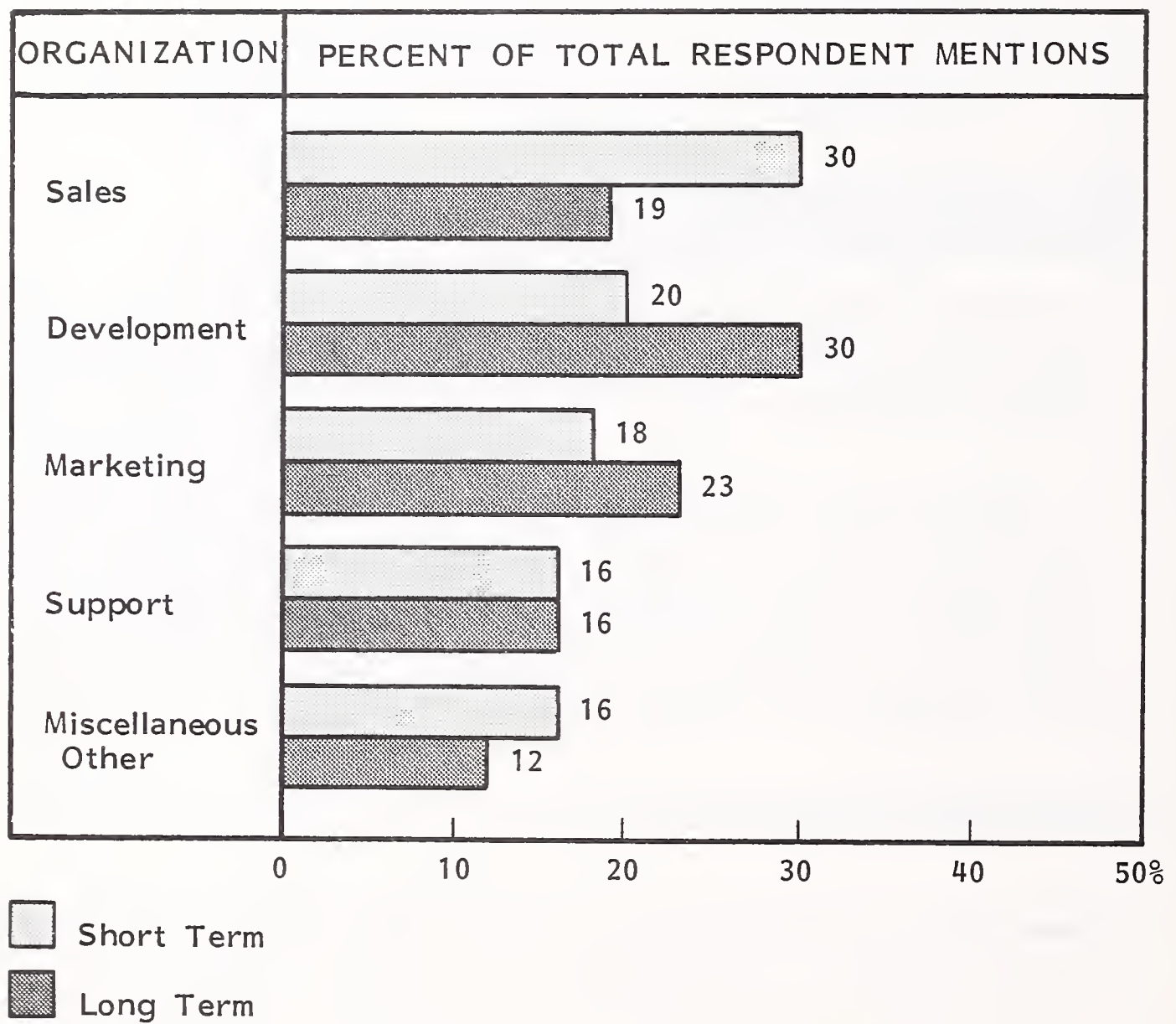
- This exhibit does not take organization rankings into consideration but, rather, the total number of times a function was mentioned.

- This gives a strong indication of respondents' short- and long-term priorities.

- It is interesting to note that development received slightly more short-term mentions than marketing.

- An analysis shows development's heavy short-term emphasis to be due to both market factors and internal problems.

  - Approximately half of the mentions were from respondents providing highly technical software or systems for very rapidly changing markets such as CAD/CAM. They see ongoing development as a necessity for survival.

  - The remainder of the mentions were either from organizations involved in aggressive turnaround efforts or from those struggling for survival.

  - Respondents who are in a less dynamic condition typically rated marketing or support along with sales as important on a short-term basis.

- Development, marketing, sales, and support received the most mentions on a long-term basis.

  - The order of ranking is an important indicator of respondents' confidence in the future.

  - Support retained an approximate tie for the third highest number of mentions, highlighting the importance of customer care in the very competitive computer services market.

- 37 -

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- Exhibit III-7 displays the data in terms of rankings. Sixty-five percent of the respondents specified sales as the number one organization on a short-term basis. (An organization grouping is not shown by name if it comprises less than 15% of the mentions.)

- Significantly more Type A organizations rated sales number one than did Types B and C. This was also the case in marketing's number two ranking.

- The clear consensus of the respondents concerning organization rank for the long term is development first and marketing second.

- When rankings are taken into consideration, significant differences in long-term importance are evident:

  - Development and sales are the only two organizations receiving a significant number of mentions as the most important organization, with development clearly number one.

  - Sales was ranked number one on a long-term basis primarily by small organizations eager to establish themselves and build a reliable revenue base. However, it did not achieve a high enough ranking for number two to even merit separate mention.

- The position of marketing in these rankings shows uncertainty on the part of the respondents.

  - Marketing's long-term subordinate ranking to development is interesting since marketing generally has responsibility for market identification and product specification. Both of these activities precede product development, so it is logical that they would be more important.

INPL

EXHIBIT III-7

MOST IMPORTANT ORGANIZATIONS - TOP RANKINGS

SHORT-TERM RANKINGS		PERCENT OF RESPONDENTS
Number One Ranking	Sales	▨ 65
	All Others	▨ 35
Number Two Ranking	Development	▨ 35
	Marketing	▨ 30
	Support	▨ 20
	All Others	▨ 15
LONG-TERM RANKINGS		
Number One Ranking	Development	▨ 50
	All Others	▨ 30
	Sales	▨ 20
Number Two Ranking	Marketing	▨ 30
	All Others	▨ 30
	Support	▨ 20
	Development	▨ 20

0   20   40   60   80   100%

- 39 -
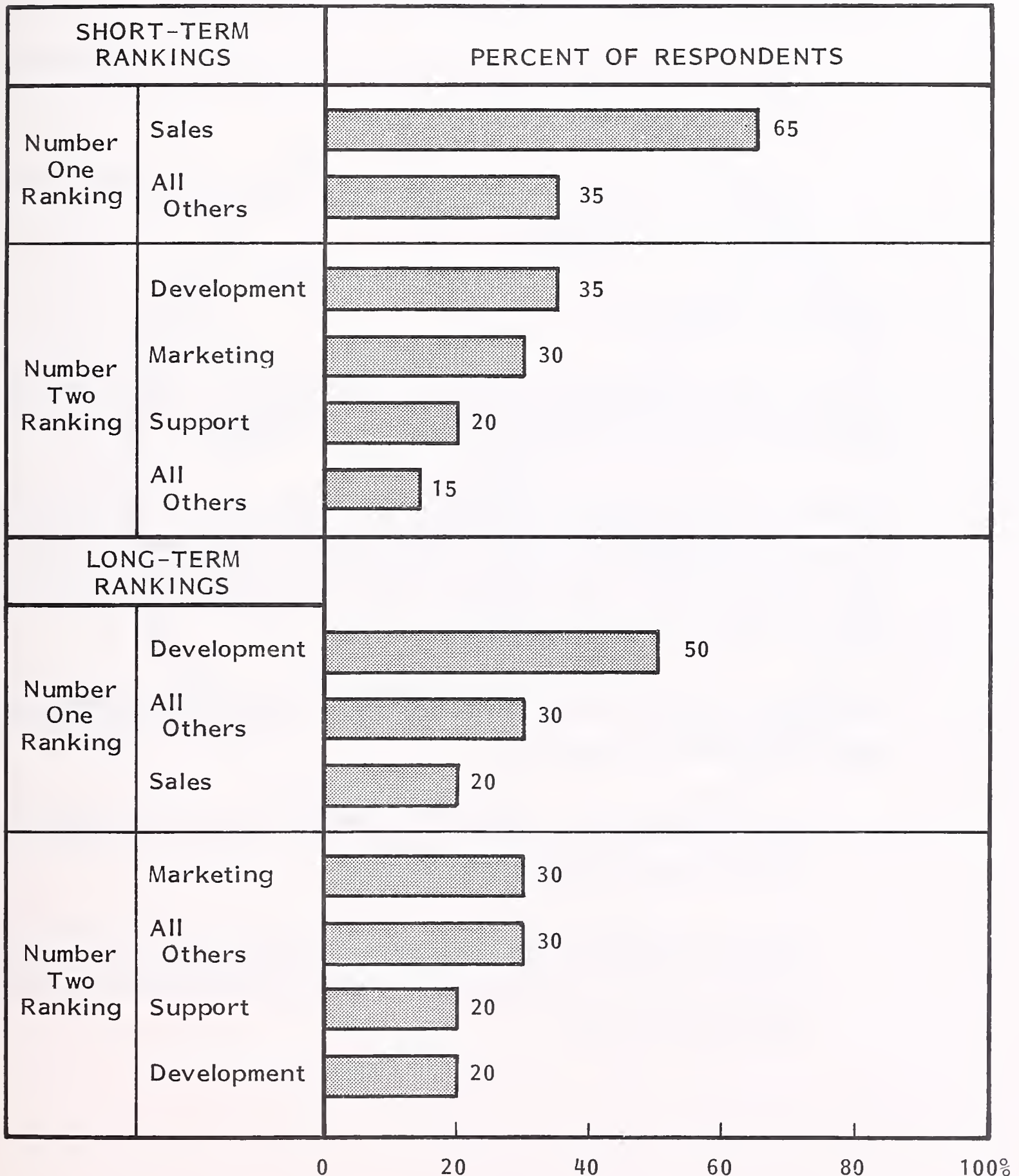
INPUT
MEPD

- This order would also imply that the development of a product is more important than its definition.

- Uncertainty over the role and importance of marketing is a problem INPUT has observed in a number of information services companies.

    - Executives must have a clear definition of the roles and responsibilities of the organizations reporting to them.

    - The lack of clearly defined roles will preclude any sharply focused attack on the marketplace.

3.   CONTROL PROBLEMS

- In order to gain additional perspective on the management control situation, respondents were asked which organizations were most difficult to control.

- Development was singled out more than any other function as the most difficult to control, as shown in Exhibit III-8. Respondent mentions for this and all other functions were well distributed across delivery modes, organization sizes, and Type A, B, and C companies.

- Respondents reporting development as the most difficult to control should carefully examine their position.

    - Development has been singled out as the most difficult to control, but the real attention focused on other areas.

    - Thirty-six percent of the responses cited development as a problem, yet only 9% of the control system improvements responses mentioned development by name.

- 40 -

EXHIBIT III-8

MOST DIFFICULT ORGANIZATIONS TO CONTROL

Sales
19%

Marketing
13%

Support
10%

Other
6%

Operations
3%

All Equal
13%

Development
36%

Percent of Responses

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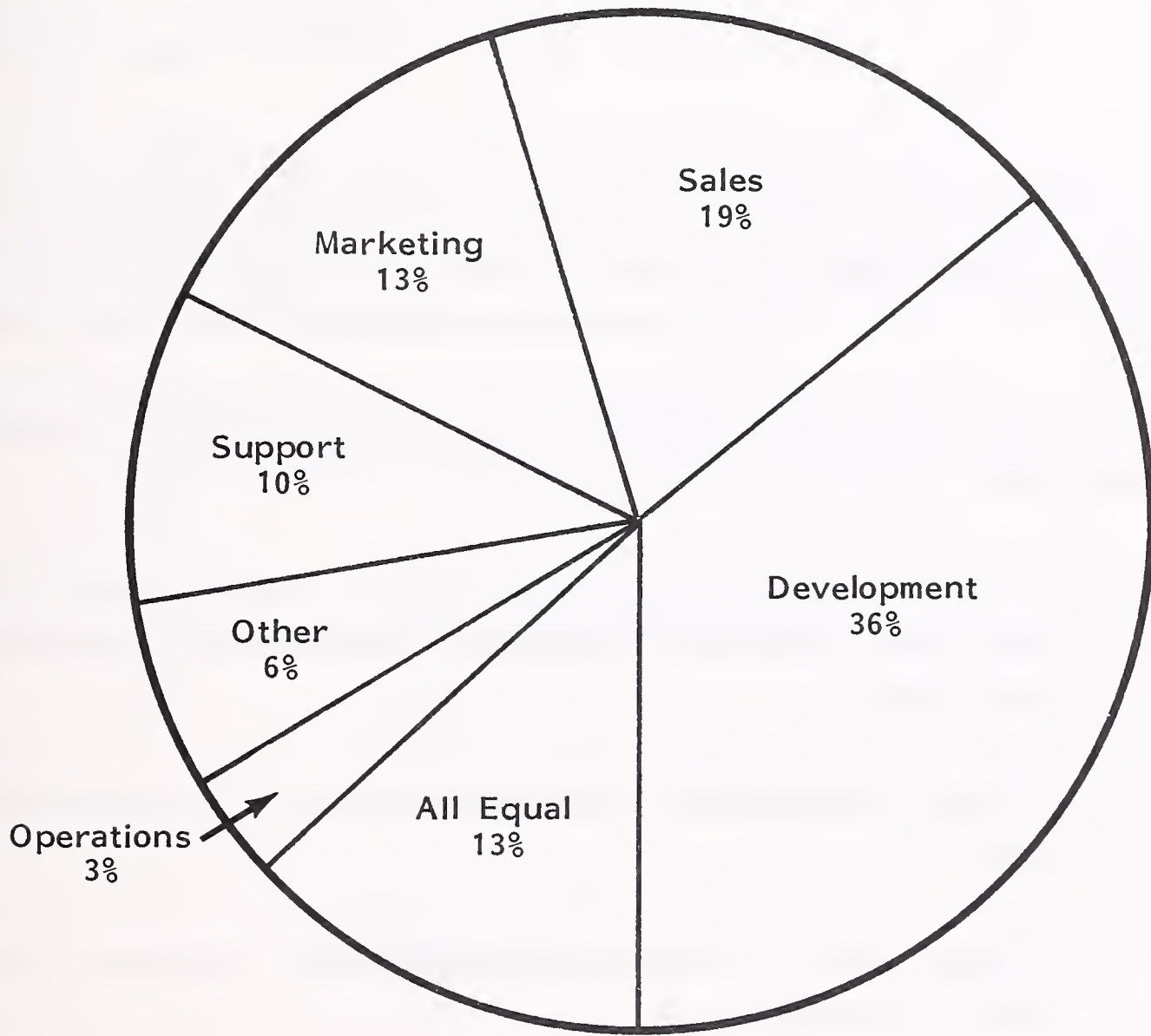
- While the seeming inconsistencies are difficult to fully explain, some respondents' comments put the situation in better perspective:

    - "Development is a leading-edge, dynamic environment."

    - "Difficult to manage projects. Not control information related. Problems are inherent in development."

    - "There are inherent problems in the development process. Few things to control."

- Several respondents cited the work habits of development people as the main source of the problem, especially their independent or unstructured ways. Others mentioned difficulty in estimating, scheduling, and measuring progress.

- Some of the respondents' comments concerning the problem and their solutions were:

    - "Development did what they wanted. They are now doing what is in the plan. More modeling, better indices of performance for both planning and control."

    - "Difficult to coordinate among projects to establish better project reporting."

    - "Problems inherent in the development process. (Solution is to) institute quality control group."

    - "Not accustomed to working in organizations. Their unstructured way of working takes a lot of management. (Solution is) more resources on better estimating and planning.

- 42 -

- It is INPUT's opinion that the disparity in the development situation arises because a frequent, pressing need for management attention is rarely felt.

    - Development problems usually only surface at review meetings or when they are large enough to create crises.

    - It can be very easy to drop development down on the list of problems to be attended to because it can be rationalized that it is less time-critical than the others.

- Managers should reconsider their priorities, keeping in proper perspective the importance of development to the organization's and their personal futures. It would be better to invest time now to resolve development problems than to pay high future costs.

- The sales organization was second in number of mentions, but its ranking was based on specific problems rather than general frustration, as with development.

    - Two respondents cited dispersed, remote sales offices as a problem:

        . "Difficult to direct remote offices. Information is not always in in time to quickly recognize and act on problems."

        . "Large territories, spread out. Need good reporting mechanism."

    - One respondent mentioned difficulty balancing compensation with results, a recurring problem in sales management. Another respondent mentioned problems understanding the sales function and the marketplace.

INPUT

- In some managers' thinking, the sales process is as much of an art form as development, but they feel more comfortable with sales because it is made up of discrete, definable elements, and progress can be measured relatively easily.

- Some of the marketing-related comments were based on the measurement dilemma. Even though a marketing program may be well defined, it can be difficult to measure and evaluate results because of time lags and the combination of results with other forces acting on the prospects.

- Managers must regularly think through their rankings of the most difficult organizations to control and then see where they are focusing their efforts; the two must be synchronized to avoid disproportionately large future problems.

    - Future plans must also be evaluated for their impact on the total organization and the control balance.

    - Care must be taken to objectively set priorities on control problems to avoid favoring those situations that are more readily definable and thus more comfortable for the manager to deal with.

C.   EXPENSE DISTRIBUTIONS

1.   INTRODUCTION

- The purpose of this section is to analyze the distribution of expenses in information services firms. This is done for several reasons:

    - To provide clients with comparative figures.

INPL

- To provide an added perspective on executive control responsibilities.

- To use expenses as a vehicle to examine one aspect of the control process and obtain an impression of how effective it is.

- The only data used is from self-contained organizations such as entire companies or profit-and-loss centers with all organization functions and no significant corporate pooling.

- Expenses for sales, marketing, and customer support are combined because most of the respondent data was only available in this form.

- Data from all delivery mode organizations have been combined for this discussion. No significant deviations by delivery modes were seen; all were within the ranges for any given delivery mode.

2. KEY FINDINGS

- Exhibit III-9 illustrates the relative distribution of expenses by function for the combined data from this survey. This illustration is useful for putting the relationship of expenses to functions in perspective, but their variability is also important.

- Expenses by function vary widely between respondents, even among those with very similar profiles of success, size, and delivery mode. The range of responses is shown in Exhibit III-10.

- The sales, marketing, and support category showed the greatest range of responses.

- The highest expense percentages were reported by two successful software organizations. Both reported over 50% of revenues expended in this area.

INPUT

EXHIBIT III-9

EXPENSE AND MARGIN DISTRIBUTIONS

Percent of Revenues

INPUT
MEPD
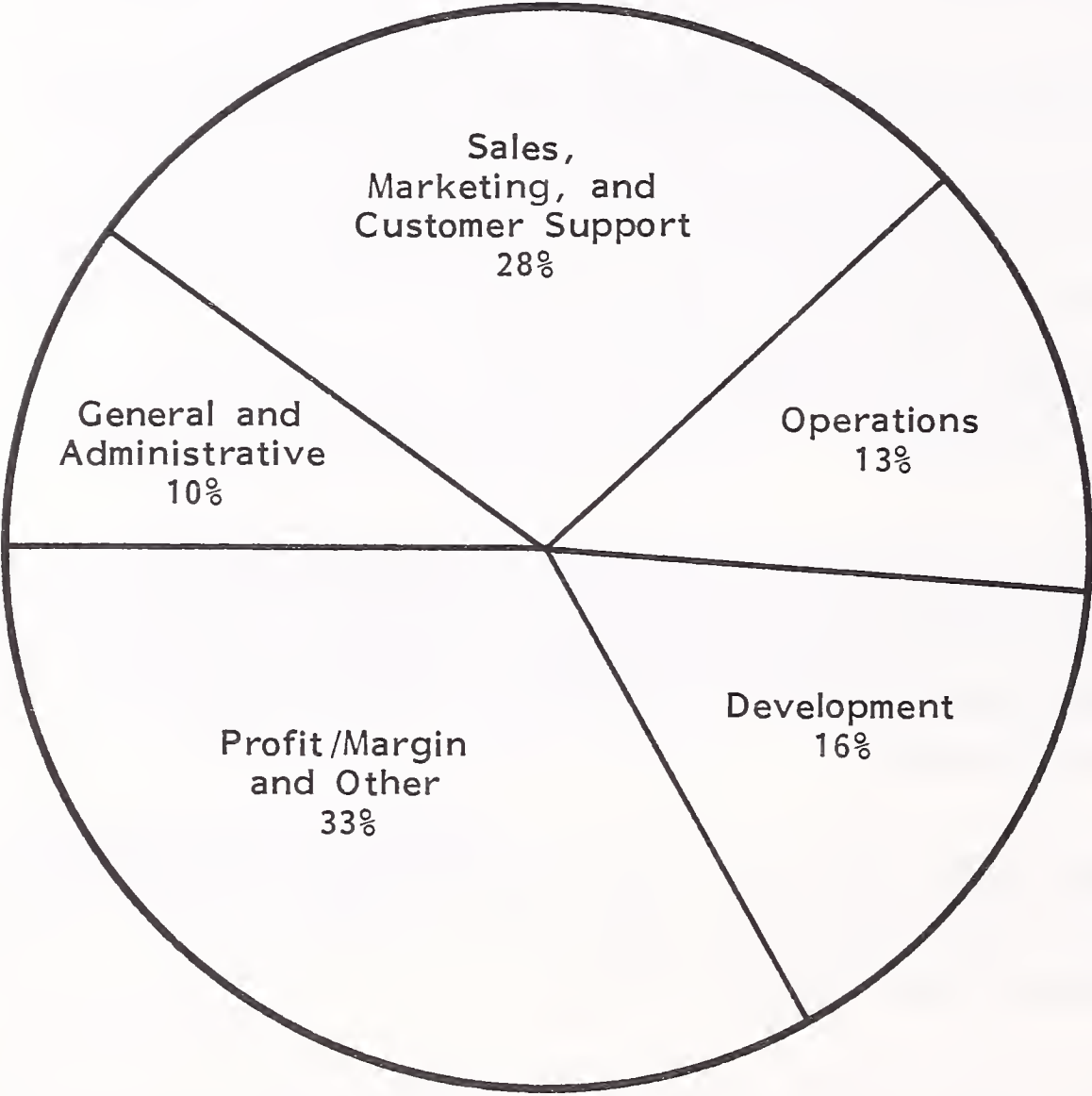
EXHIBIT III-10

RESPONDENTS' EXPENSE DISTRIBUTIONS

EXPENSE CATEGORY	PERCENT OF REVENUES EXPENDED
Sales, Marketing, and Support	28.1 · 12 — 50
Computer Operations	12.6 · 5 — 19
Product Development	16.3 · 8 — 30
General and Administrative	9.7 · 2 — 15

0   10   20   30   40   50   60%

Minimum   Average   Maximum

Response

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MEPD
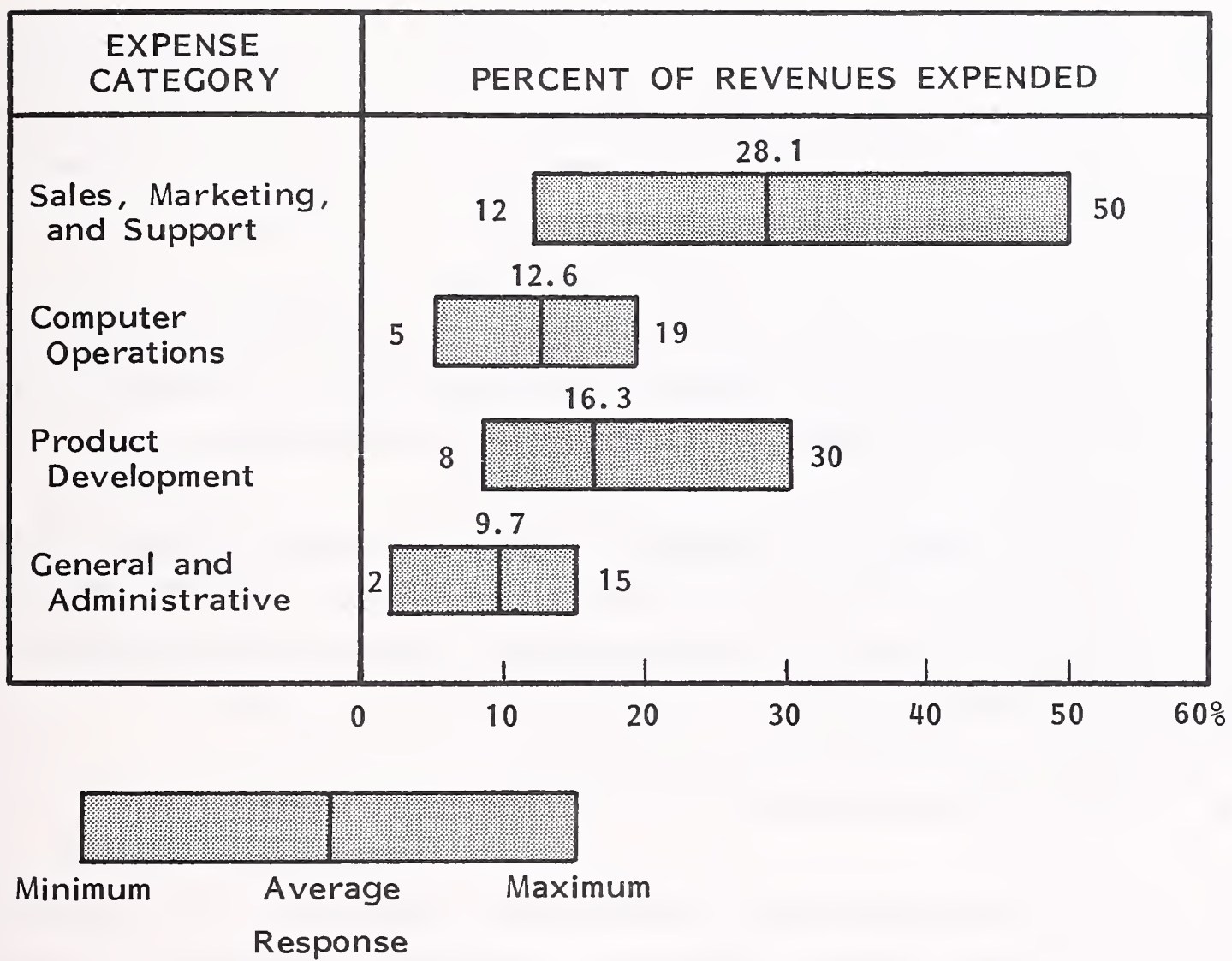
- The average expense level without the two unusually high respondents was still higher than any other functional area at 21%.

- Development expenses varied widely, with software respondents reporting from 8% to 25%.

- No patterns were apparent in the responses by different success types. This can be attributed to the delay of development's impact on revenues.

- Processing services organizations generally ranked high on the distribution range of computer operations expenses, as one would expect; however, several successful software firms with very active development programs also reported operations expenses above the norm.

- As mentioned earlier, some data were not available due to respondents' unwillingness to disclose them, but additional data were lost due to respondents' reporting system inadequacies and related problems.

- Only one respondent had separate expenses for sales, marketing, and support organizations. Two other respondents were able to readily segregate sales and marketing expenses. All other respondents reported combined expenses for all three functions.

- Other areas were combined on some respondents' reports.

  - The most extreme example was one senior executive who received only three expense categories: operations, general and administrative (G&A), and salaries. He mentioned this severely limited his ability to manage effectively.

  - Combining data on organizations obscures management's visibility of their interactions and individual performances.

- 48 -

- Each major function should be reported distinctly.

• Executive familiarity with expenses and their distribution showed a surprisingly wide variance. It is reasonable to expect that someone with profit-and-loss responsibilities would show a degree of familiarity with his organization's expense situation; however, this was not the case with some respondents.

- Several chief executives of successful companies were able to cite their expense distributions from memory. One stated that he stayed on top of his expenses because they were the only component of the profit equation that he could control directly and quickly.

- Approximately one-fourth of the respondents had very limited knowledge of their expense positions.

• Most respondents had ready access to financial reports, but many were either not conversant with them or expressed difficulty finding the necessary information in them. The problems appear to come from two areas: poor reporting systems and management's lack of knowledge or familiarity.

- Most financial reports provided to P&L executives are direct by-products of accounting systems. In many cases they are copies of accounting reports, with little or no reformatting to adapt them to the executive's needs.

- The information requirements of accounting and management may be drastically different, both in level of detail and arrangement of information. The latter point became apparent in the research when a number of the respondents were forced to manually extract and combine data to arrive at a distribution by function. The distribution of certain expenses by organization may be meaningless to accounting, but it can be extremely important to the P&L manager.

INPUT

- Many P&L managers could not be considered competent in accounting principles and practices and possess only the most fundamental accounting skills. This poses a problem when such a manager is forced to depend on accounting reports for a large part of his financial control information.

- Companies tolerating inadequate reporting systems or poor distribution of information should carefully consider that it may increase management uncertainty, which can carry a high hidden price to the corporation.

D. CONCLUSIONS AND RECOMMENDATIONS

- One of the most disturbing aspects of the entire survey was the respondents' lack of knowledge of (and easy access to) critical expense distribution data. For the most part, key managers are not actively using expense distributions as part of their decision-making process.

  - INPUT urges decision makers to take a more financially oriented view of management control during these challenging times of the 80s.

  - A major key to success will be a proper balance of resources among the functional areas.

- Many respondents appeared to take organization-related issues for granted. Numerous inconsistencies were found between respondents' reported problem areas and the focus of their efforts. Executives must make sure they are optimizing their time and effort.

- Executives with multiple revenue streams should insure that management resources are not being diverted away from the main streams.

INP

- Major streams should be considered for reorganization into P&L centers to avoid dilution of executive time and allow management resources to be narrowly focused.

- Minor revenue streams must be objectively examined to be sure there is a valid reason for continuing them. They must make a real contribution to the organization's performance and be consistent with the organization's charter and goals.

- Any revenue stream that requires a disproportionate amount of management resources should come under close scrutiny to determine the causes and cures of the problem.

● Management compensation programs should be reviewed to make certain they serve their purpose of guiding activities in the most beneficial direction for the corporation. Incentives inconsistent with organizational goals and objectives will eventually prove counterproductive.

● Rankings of organization importance should be examined by executives to see if the organization's rating is consistent with its role in the overall firm.

- For example, a high rating for development's short-term importance could indicate a higher than normal need for product modifications due either to a lack of sales direction toward the correct market segments or marketing's failure to properly define the needs of the marketplace.

- Inconsistencies or deviations from normally anticipated ratings of organizations should be thoroughly examined and explained.

● Executives should also take a hard look at the organizations they ranked most difficult to control to insure they are being objective and not reacting to an uncomfortable situation.

INPUT

- Two good measurements of the situation are where they spend their time and the adequacy of their controls.

- If a corresponding amount of time is spent on the most difficult organizations and adequate controls are in place, then the rankings are valid and the manager's efforts are being well spent; if not, remedial action is called for.

• Research into expense distributions in a number of respondent firms revealed a serious need for readily usable, meaningful management control information.

- Executives should evaluate reports they receive and forcefully press for information in the format and level of detail they require.

- They should also be alert to situations where their subordinates are not conversant with the organization's control reports and obtain training or familiarization for them.

INPU

IV KEY CONTROLS

IV   KEY CONTROLS

A.   INTRODUCTION

I.   PURPOSE

- The purpose of this chapter is to take a closer look at management control by focusing on the items of information or data used in the control process.

- By examining the control items in detail, it is possible to form an overall picture of the control process at multiple levels.

  - This data has been organized and condensed to help clients evaluate their own situation in order to make improvements leading to more effective control.

  - Clients can also use the experiences of the respondents to validate their own practices or gain fresh insights.

- Information gained from the interviews and data analysis is presented in several levels of detail to suit various clients' needs and interests. The intention is to profile a cross-section of industry executives':

  - Priorities in managing their organizations.

  - Problems with the control process.

INPUT

- Information items used in control.

- Relative importance rankings of classes of information.

2.   METHODOLOGY

- The data have been organized and segregated along organization function lines such as sales, marketing, and computer operations.

- The data items pertaining to each functional area have been grouped according to topic or areas of interest in order to condense the information and make it more understandable.

    - For example, the sales function has been divided into six groups, one of which is titled Prospects. This group includes control items pertaining to prospect activity, such as sales cycle status and proposed business backlog.

    - The data items included in each group are listed in tabular exhibits following each graphical exhibit.

    - Respondents' ratings of importance for all data items within a group have been combined to indicate the overall importance of the group.

- Control item groups are displayed in order of their importance rating within each functional area.

- Each bar on the control items exhibits contains two items of information: average rating and degree of use.

    - The average rating is the arithmetic average of all responses to all items within the particular group.

- 54 -

-   The degree of use of items in a group is the ratio of "use" to "don't use" responses. It is shown on the exhibits by shading on each bar of the graph.

-   For example, if 60% of the respondents for a set of data items used them and 40% did not, the bar on the graph would be shaded for 60% of its length.

-   The degree of use shading is shown to give the reader a relative indicator of the respondents' use of items. It should enable the reader to quickly see not only how important the respondents felt a group of items were, but approximately how many of them used or did not use them.

•   Control data have been analyzed in several ways.

-   By importance ratings of items and group of items.

-   Through respondent comments.

-   From notes and impressions obtained through the interviews.

-   From the examination of items with a high number of responses.

•   Analysis of items with a high number of responses will usually be valid because of greater statistical reliability; however, the reader should not ignore any item if it is of use in coming to grips with a specific problem.

•   The reader is cautioned that some item ratings are based on small sample sizes and should be used as indicators only.

INPUT

3. OVERVIEW

- Over 700 control item responses were recorded, 70% of which were from users of the particular items and therefore also yielded importance ratings.

- The frequency of responses by functional area is a good indicator of the respondents' priorities and focus.

    - The responses essentially show which areas a respondent considers most important or where he must concentrate his efforts because of problems.

    - They may also indicate where he spends his time.

    - This was especially evident during the interview process when a respondent would begin discussing control of a functional area without being prompted.

- Exhibit IV-I shows the distribution of control item use responses, that is, responses to an item from respondents who use that particular item.

- It is no surprise that the sales function was the most frequently responded to, since no matter what other problems may confront the manager, revenues receive the most attention. It may also be that sales is one of the few functions that can be measured easily.

- Even though development received the highest ranking as the second most important organization, as was seen in Exhibit III-7, it is ranked near the bottom on the control item use distribution.

- Another perspective on this situation may be gained by comparing Exhibits III-8 and IV-I.

- 56 -

EXHIBIT IV-1

DISTRIBUTION OF CONTROL ITEM RESPONSES BY
FUNCTIONAL AREA
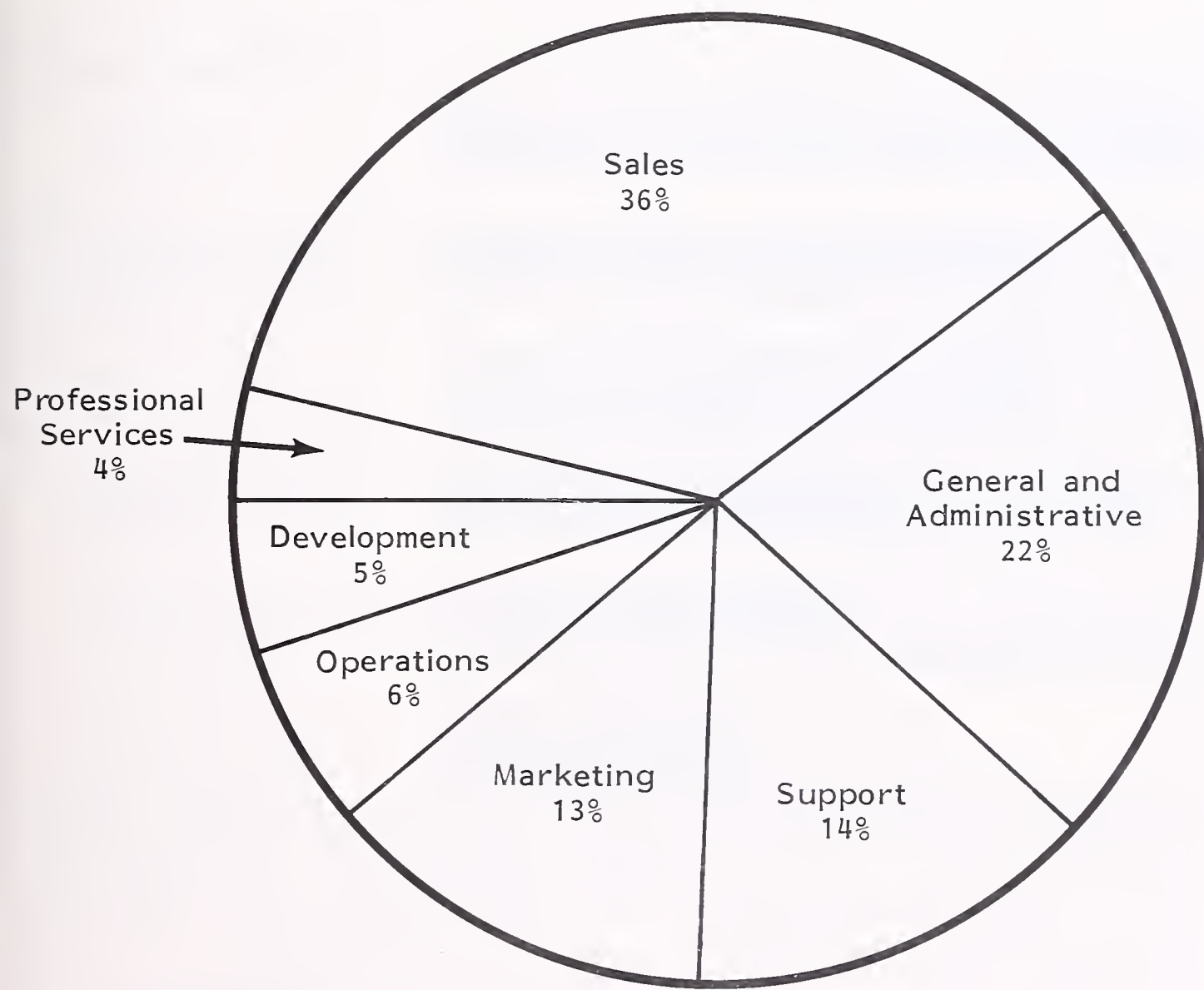
Percent of Total Control
Item Use Responses

INPUT
MEPD

- The percentage ratings of organization control difficulty compare very closely with control item use responses for marketing and support.

- There is a notable discrepancy between development's difficulty rating and number of control item responses.

- There should be a correspondence between ratings of importance, difficulty, and the number of control responses.

• Respondents voluntarily added 28 control items to the questionnaire list for sales but only five for development.

- Given the importance ranking of development and its rating as the most difficult to control, it should be a top priority for managers to address.

- More control items must be established to enable closer control of development while at the same time reducing the level of difficulty.

B.   SALES CONTROLS

• Information concerning prospects received the highest importance rating of the sales control item groups, as shown in Exhibit IV-2. The detailed list of items included within each group may be found in Exhibit IV-3. Information concerning the prospect pipeline received the most responses in this group, reflecting the managers' concern for gaining as much visibility into the future as possible.

• As shown in Exhibit IV-2, 100% of the prospect group responses were from respondents who use these data items for control.

- 58 -

EXHIBIT IV-2

IMPORTANCE OF SALES CONTROLS

Control Item
<u>Group</u>

Prospects — 9.0

Customer Data — 8.5

Orders/Revenues — 8.3

Sales Activities — 8.3

Sales Representative Performance — 7.8

Sales Expense — 5.9

Importance Ratings

Unimportant — 0 2 4 6 8 10 — Vital

Average Rating

"Use" Responses   "Don't Use" Responses

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MEPD
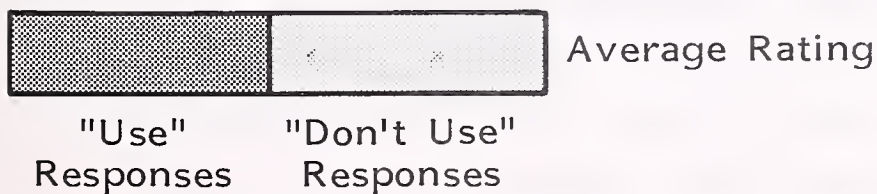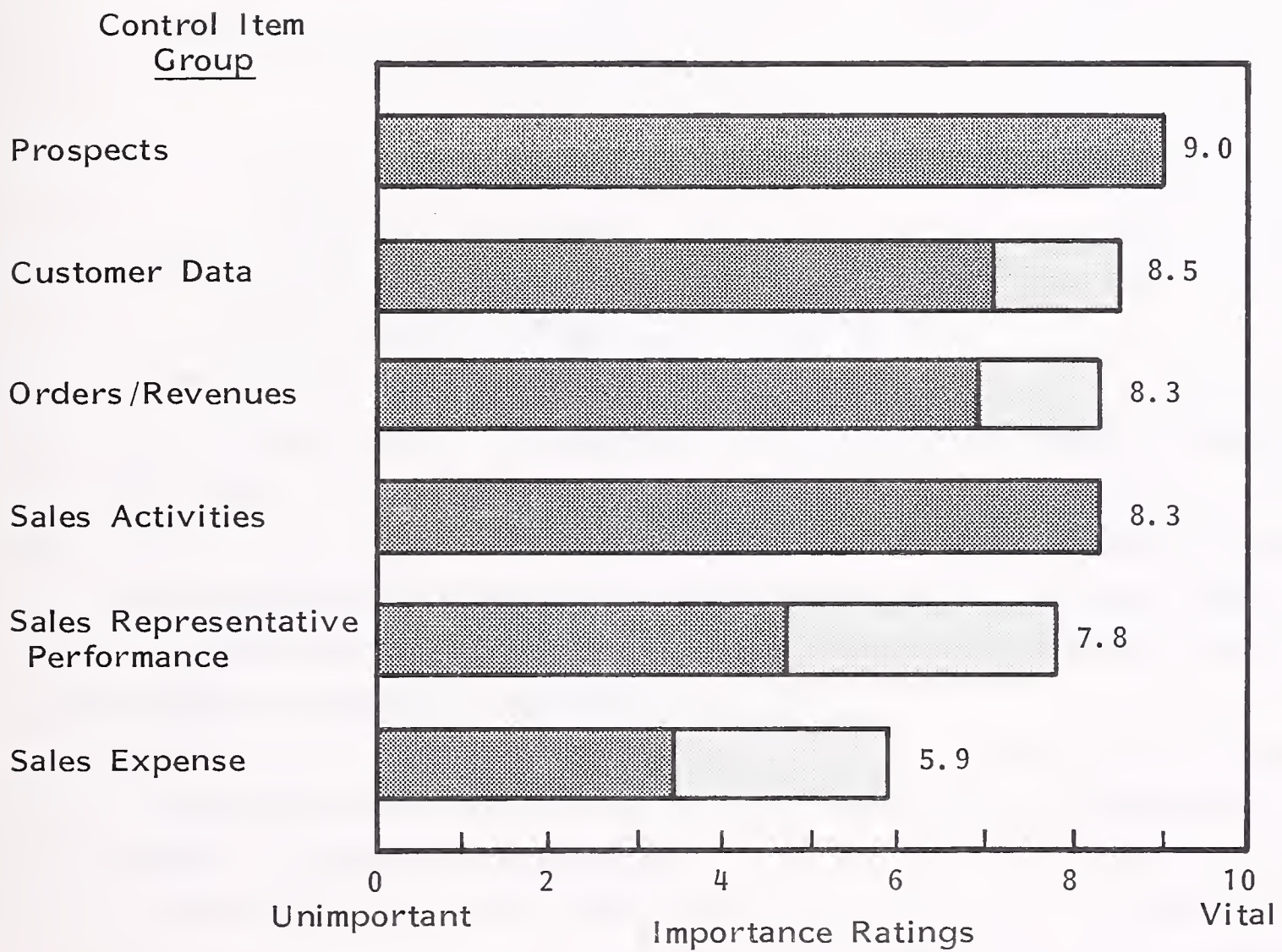
EXHIBIT IV-3

SALES CONTROL ITEM GROUPINGS

GROUP	ITEM #	GROUP	ITEM #
Prospects (26)		(Orders/Revenues Cont.)	
Prospect pipeline	101	Average revenue per sale	124
Percent of pipeline closed	102	Percent of clients purchasing	
Sales cycle status	119	maintenance	125
Demonstrations and benchmarks	121		
Proposed business backlog	127	Sales Activities (13)	
Timing of sales	128	Sales time per order	113
Prospect close strategy or plan	129	Telephone contacts per week	115
		Number of new contacts	116
Customer Data (24)		Follow-up contacts per week	117
Key account status	7	Number of client visits	118
Number of clients	105	Number of calls per sales rep.	120
Average client billings	106		
New name accounts	107	Sales Rep. Performance (41)	
Top client revenues	110	Bookings per sales rep	1
		Number of orders per sales rep.	3
Orders/Revenues (60)		Quota attainment per sales rep.	5
Sales forecasts	4	Product mix by sales rep.	8
Sales by product line	6	Revenue increase per sales rep.	109
Order backlog	53	New sales rep. effectiveness	126
Shipments	54		
Number of installs completed	55	Sales Expense (14)	
Order debookings	103	Travel expense per sales rep.	2
New account sales	108	Travel expense by organization	104
Product revenue mix	112	Cost per sale	111
Sales by organization	114	Expense-to-bookings ratio	123
Bookings by organization	122		

(   ) = number of use mentions

INPUT
MEPD

- Customer data control items ranked second in importance to respondents in the sales control area. The highest response item of customer data is Key Account Status.

- Respondents reported a strong desire to maintain a close watch over their key accounts for a number of reasons:

    - Strong source of incremental revenues.

    - Reference selling.

    - Sounding board for new products and enhancement ideas as well as a source of test sites.

    - Serve as bellwethers for market conditions.

- One respondent stressed the importance of weekly key account status reviews.

- Not all respondents to the Key Account Status item agreed with its value as a control item; 30% responded "no" when queried on its use. "No" responses came from different respondent types and can therefore only be attributed to individual management style and preference.

- Sales Forecasts and Sales by Product were the most frequently mentioned items in the Orders/Revenues group.

    - While order and revenue information is important to management, it has a slightly lower importance rating because many of the data items are historical.

    - The sales function must be managed with a forward-looking perspective to be successful.

- 61 -

INPUT

- Sales Forecasts received an average rating of only 8.2.

  - A number of respondents remarked that the importance of their forecasts was lessened due to their lack of reliability.

  - This is an area of general concern, one which merits closer analysis and badly needs corrective action. More accurate forecasting would greatly lessen the need for the management reactions and corrective measures that occur all too frequently.

- Sales Activities received a relatively high average rating but was used by a fairly small percentage of the respondents.

  - Most executives interviewed did not get involved in this level of detail but, appropriately, delegated it to their subordinates.

  - Involvement of an executive in this level of detail would be symptomatic of either a personnel or a communications problem.

- One manager with direct sales responsibility reported using a standard of 15 face-to-face sales calls per week for his sales representatives.

- Sales Representative Performance also received a lower rating than most groups but received a high number of responses.

  - The highest response items in this group are Bookings per Sales Representative and Quota Attainment.

  - Respondents were significantly divided on their use of items in this group. As the exhibit shows, there were approximately 50% "don't use" responses.

INPI

- As with Sales Activities, a number of respondents felt that this area was primarily a subordinate responsibility and then were interested only in overall performance and exception situations.

- A number of sales performance standards were reported by respondents.

    - Generally, the only relevant, usable standards were for software sales.

    - Software sales performance standards were mostly in the $50-60 thousand per man-month range with some standards as high as $80 thousand per sales representative per month.

- Sales Expense was not considered very important by the respondents, some of whom commented that their interest and requirements were more at the sales organization level.

C.   GENERAL AND ADMINISTRATIVE CONTROLS

- Not surprisingly, Cash Flow and Profits were the highest rated in the General and Administrative area, as shown in Exhibit IV-4.

- Of the detailed items listed in Exhibit IV-5, Receivables Aging and Cash Flow received virtually all of the responses for the Cash Flow group, with only one respondent reporting the use of cash flow projections.

    - Approximately 60% of the respondents reported using cash flow as a control item.

- Two-thirds of the respondents reported using Receivables Aging as a control. Most reported goals of less than 45 days but some used 60; one executive cited a surprisingly low standard of less than 90 days.

- 63 -

INPUT

EXHIBIT IV-4

IMPORTANCE OF GENERAL AND ADMINISTRATIVE CONTROLS

Control Item Group

	Importance Ratings
Cash Flow	9.6
Profits	9.2
Expenses	8.3
Revenues	8.2
Human Resources	8.2

0 — Unimportant
10 — Vital

Importance Ratings

Average Rating

"Use" Responses   "Don't Use" Responses
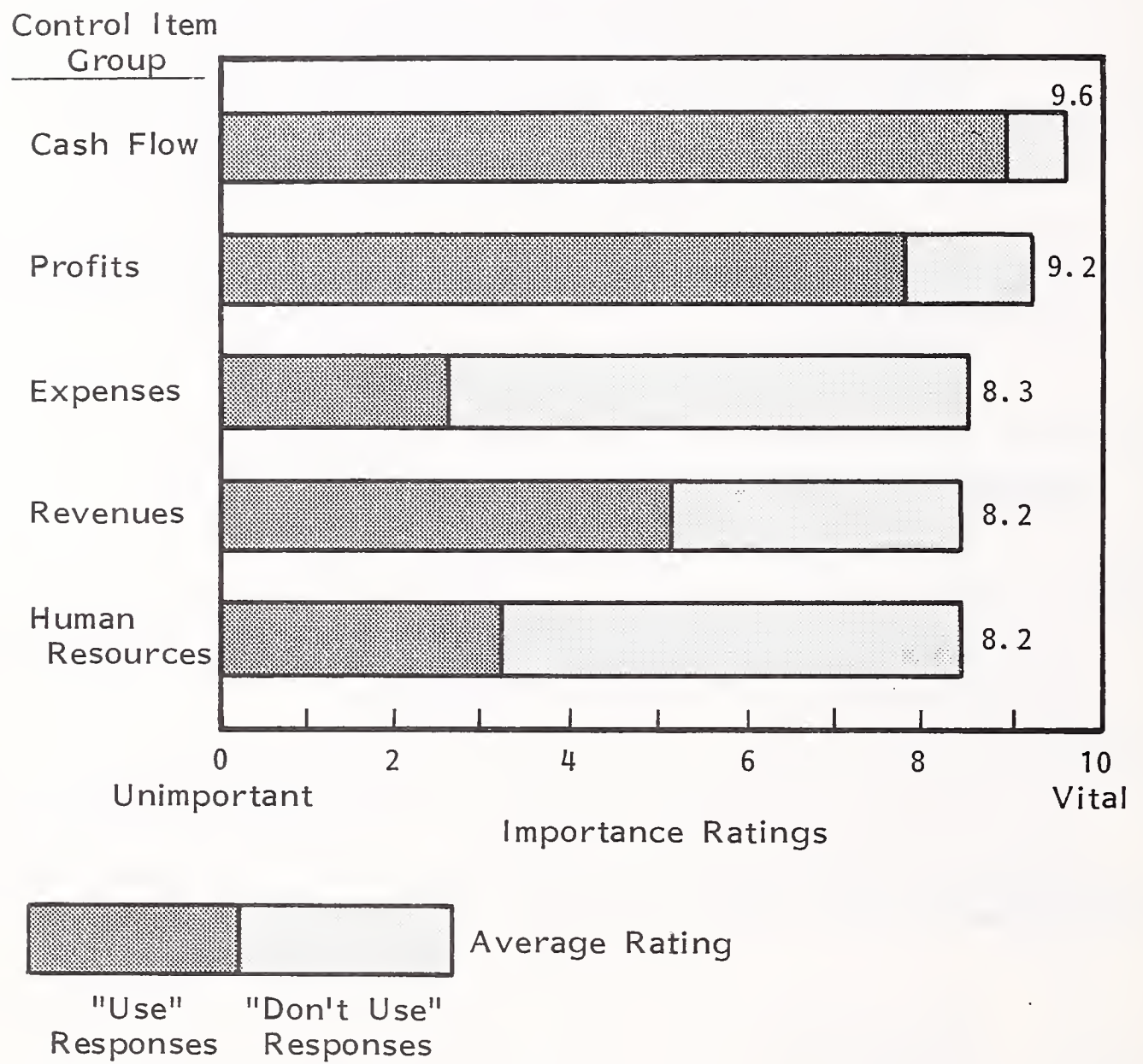
EXHIBIT IV-5

GENERAL AND ADMINISTRATIVE CONTROL ITEM GROUPINGS

GROUP	ITEM #	GROUP	ITEM #
Cash Flow (38)		(Expenses, cont.)	
Receivables aging	17	Expense-to-revenue ratio forecast	162
Cash flow	22	Travel cost by organization	165
Cash flow projections	168	Expense-to-revenue ratios	169
Profits (27)		Revenues (15)	
Profit by Product	23	Revenue per employee	18
Profit or margin by Organization	160	Revenue by client	170
Profit per employee	163	Revenue forecasts	171
Profit forecasts	164		
Profit by client or sale	166	Human Resources (19)	
Profit by sales representative	174	Employee turnover	20
		Sales representatives per sales manager	21
Expenses (7)		Hiring cost per new employee	24
Overhead per employee	19	Salaries	167
Administration cost by organization	161	Staffing and staffing plans	172
		Employee morale	173

(   ) = number of use mentions

INPUT
MEPD

- Profit by Product was the highest response item within the Profits group.

    - This item alone had a moderately high rating of 8.8 and is used by 40% of the respondents

    - Numerous comments were received concerning the strong need and desire for more detailed profit accounting and reporting.

- Finer control over profits should be a high priority for all managers wishing to optimize their performance.

- Accounting and reporting system modification or replacement costs must be compared to:

    - Disparities between product profits and the resources they require.

    - Opportunity cost of management time spent on marginally profitable products.

    - Opportunity cost of management time spent interpreting suboptimum reports or the manual preparation of reports.

- Profit reporting is not the only area in which managers were concerned about the relevance and adequacy of the information they receive.

    - INPUT recommends that executives take a strong stand in pressing for an objective assessment of the problem and an accurate, thorough cost/benefit analysis of reporting system improvements.

    - Information should not be a barrier to executive performance in information services companies.

INPU

- Responses to the Expenses and Revenues groups were the lowest of all groups in the General and Administrative area.

    - This does not mean they are not closely managed or important areas, but rather that there are few special or notable control methods in this area.

- Forty percent of the respondents reported using the ratio of Revenues per Employee as a control; however, only 7% reported using Overhead Per Employee.

    - Revenue per Employee can be useful as a quick indicator of both profitability and revenue-generating efficiency.

    - Overhead per Employee should be considered by managers for use as an excellent barometer of organization and administrative efficiency.

- Human Resources responses of interest include turnover, hiring costs, and morale. This group had a relatively low number of responses and was clearly not an area of major concern to most survey respondents.

- The responses to Employee Turnover were evenly divided between "use" and "don't use." About 30% of the respondents monitor employee turnover but the impression is that it is used as more of a barometer than an actual control.

- Acceptable turnover rates ranged from a low of 8% per year to 35%. Most were in the area of 20% and showed variance within the same product-type companies.

    - Several respondents commented that one of the few good things to come out of the national economic situation was a reduction in employee job changing due to higher relocation costs and other economic uncertainties.

INPUT

- Other respondents reported involvement in turnover only if key people or a key function were affected. Most survey respondents agreed, rating turnover's importance relative to its frequency and effect.

D.   SUPPORT CONTROLS

- Support function ratings and control items are shown in Exhibits IV-6 and IV-7 respectively.

- The support area in general received a fairly low level of responses; as can be seen by the bar shading, approximately one-third of the respondents to these items reported that they do not use them.

- Importance ratings on individual items varied widely, indicating that the value placed on support is an open issue.

    - Most managers regard support only as a necessary expense, while others regard it as a powerful resource for capturing and retaining customers.

    - This latter opinion was shared by one respondent who requires his support staff to visit each customer site at least four times per year.

    - This company also reported the highest support staffing ratio of 1.75 support representatives per sales representative. Most responses stated a 1:1 goal.

    - At such high staff ratios and activity levels, the support activities begin to take on the appearance of sales, which may be a very effective approach in selling highly technical products.

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EXHIBIT IV-6

IMPORTANCE OF SUPPORT CONTROLS

Control Item
Group

Average Rating

"Use"   "Don't Use"
Responses   Responses

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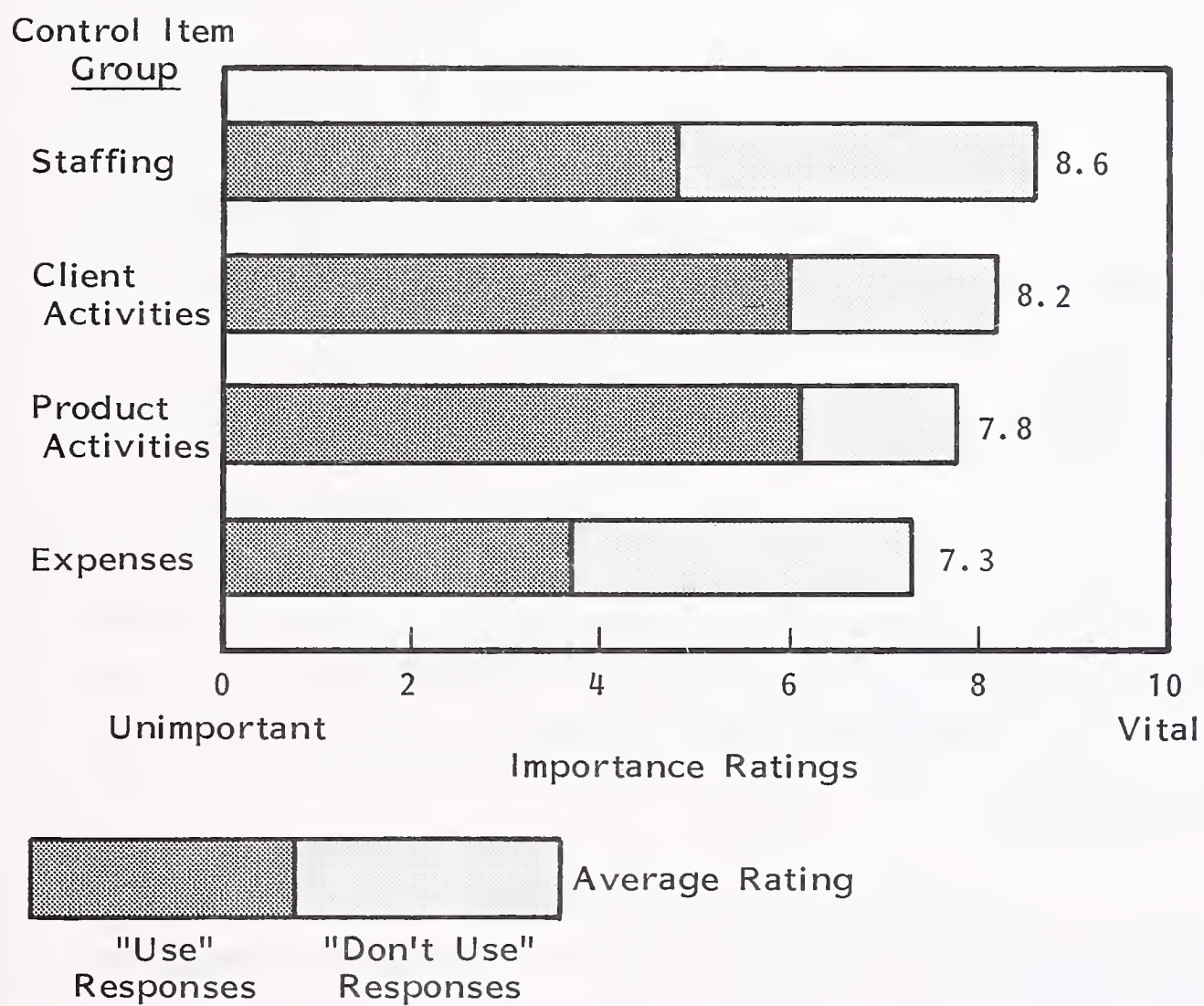
EXHIBIT IV-7

SUPPORT CONTROL ITEM GROUPINGS

GROUP	ITEM #	GROUP	ITEM #
<u>Staffing</u> (9)		(Product Activities, cont.)	
Support-representative-to-sales-representative ratio	29	Number of serious problems outstanding	183
Support-representative-to-customer ratio	195	Number of serious problems reported	184
		Modifications requested	185
<u>Client Activities</u> (26)		Modifications completed	186
Visits per customer	30	Time to respond	187
Customers trained per month	31	Problem backlog	188
Customer satisfaction	181	Nature of support calls	193
Training backlog	189		
Problem status by client	190		
Status of system installations	192	<u>Expenses</u> (22)	
Customer complaints	194	Travel cost per support representative	28
		Amount of computer resources used	32
<u>Product Activities</u> (41)		Cost per system installed	61
Calls received per month	25	Support expense as percent of revenues	180
Number of problems resolved per month	26	Total expenses	182
Time to resolve problems	27	Support cost by product or service	191

( ) = number of use responses

- 70 -

INPUT
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E.   MARKETING CONTROLS

- The overall impression gained from respondent interviews is that marketing is a very perplexing area for most managers, one they wish to avoid if it isn't causing any problems. INPUT views this attitude as dangerous since marketing is a key skill for coping with the complexities of today's marketplace.

    - The marketing function is not as clearly defined to respondents as, for example, development or sales.

    - Marketing's role in the organization depends on a great number of factors, including organization size; organization relationship with sales (and the relative strength of the managers of the two organizations); maturity of the market, company, and its products; and especially the understanding of the marketing function and the needs of the chief executive.

- Marketing control items generally were not considered as important as control items in the other functional areas such as sales or G&A. This is shown in Exhibit IV-8 where most control item groups have an average rating of less than eight.

- Respondent comments and responses indicate a range of marketing capabilities from sophisticated to rudimentary, as shown in Exhibit IV-9. Some determine and track items such as market penetration and market share while some are reportedly concerned with finding a good method for tracking and evaluating sales leads.

- Forty-three percent of the survey respondents report the use of lost prospect analysis, while only 3% reported new sales and lost business analyses to be important.

INPUT

EXHIBIT IV-8

IMPORTANCE OF MARKETING CONTROLS

Control Item
<u>Group</u>

	Importance Ratings

Customer
Information — 8.5

Prospect
Information — 7.3

Promotional
Activities — 7.1

Promotional
Effectiveness — 6.7

Market
Information — 6.6

0 2 4 6 8 10
Unimportant   Vital

Importance Ratings

Average Rating

"Use"
Responses   "Don't Use"
Responses

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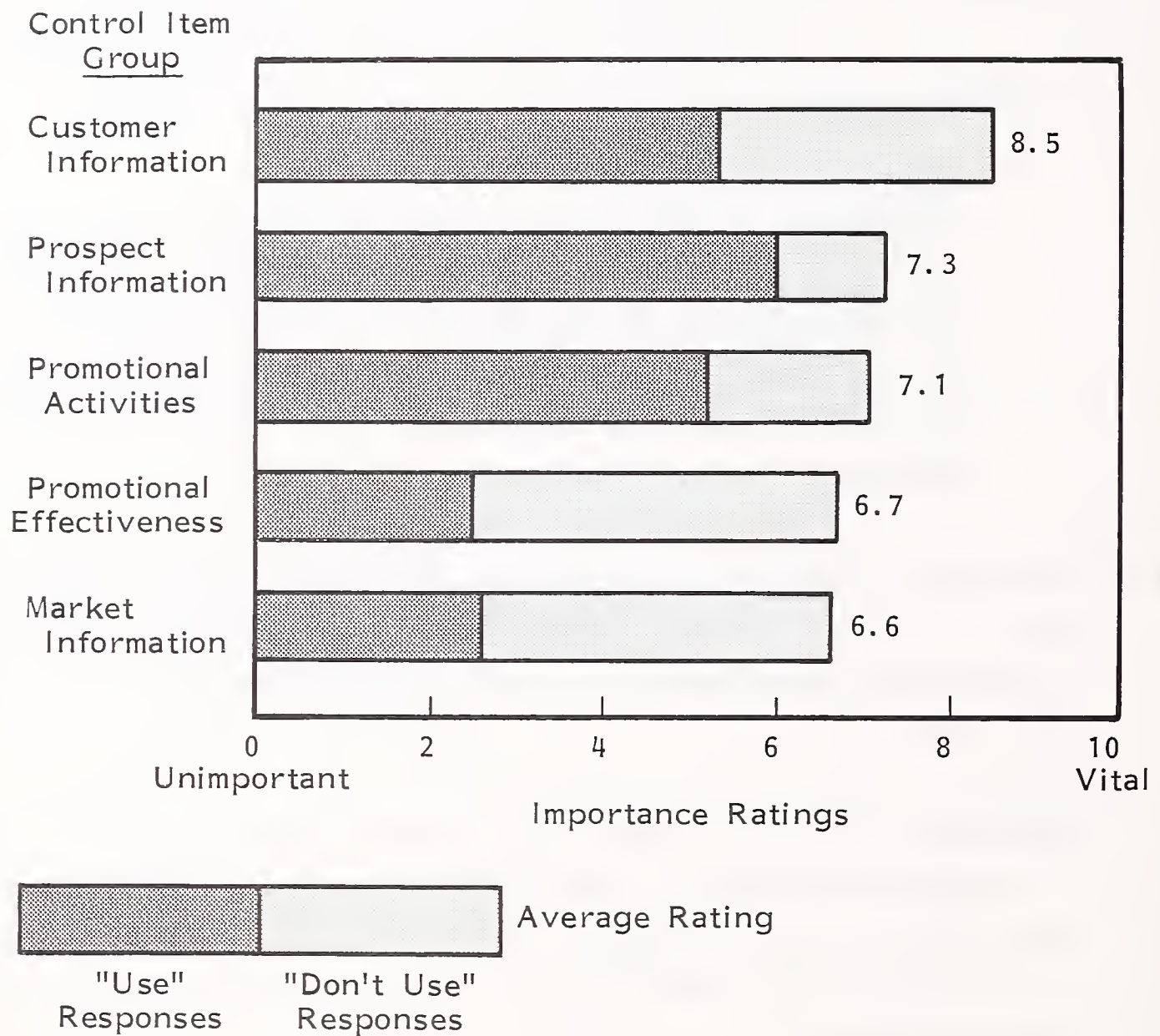
EXHIBIT IV-9

MARKETING CONTROL ITEM GROUPINGS

GROUP	ITEM #	GROUP	ITEM #
Customer Information (13)		(Promotional Activities, cont.)	
Changes in customer profile	12	Number of seminars	133
Key account satisfaction survey	131	Number of inquiries	134
Clients' long-term plans	138	Type of inquiry	135
Lost business analysis	141	Trade show leads	140
New sales analysis	142		
		Promotional Effectiveness (11)	
Prospect Information (14)		Cost per sales lead	14
Lost prospect analysis	9	Promotion cost per product or service	15
Prospect profile	136	Sales by promotional source	137
		Quality of sales leads	139
Promotional Activities (17)			
Sales leads generated	13	Market Information (11)	
Sales leads by promotional source	130	Market share	10
Seminar attendance	132	Market penetration	11

( ) = number of use mentions

INPUT
MEPD

- INPUT believes new sales and lost business analyses provide invaluable information to managers who want to learn to replicate their successes and avoid repeating their failures. These analyses also highlight strengths and weaknesses in a wide number of areas.

- Promotional Effectiveness was a very weak response area with more "don't use" than "use" responses.

    - This represents a lost opportunity considering the large sums of money spent by information services companies on product promotion.

    - One executive complained of "spending millions" on advertising and not knowing what it really did for him. His rationale was that he felt it had to be done; he was actively working on the tracking problem.

- The only Market Information items responded to were Market Share and Market Penetration, typically concerns only of larger firms concerned with saturating their market. It was expected that some respondents would volunteer other market information items such as competitive analyses or analysis of competitive wins and losses. These are "soft" information items but can provide very good indications of product or sales force effectiveness in the marketplace.

F.   OTHER CONTROLS

- Computer operations controls responses are shown in Exhibits IV-10 and IV-11. The only respondents surveyed for this function were executives in processing services companies.

INPUT

EXHIBIT IV-10

- 75 -

IMPORTANCE OF COMPUTER OPERATIONS CONTROLS

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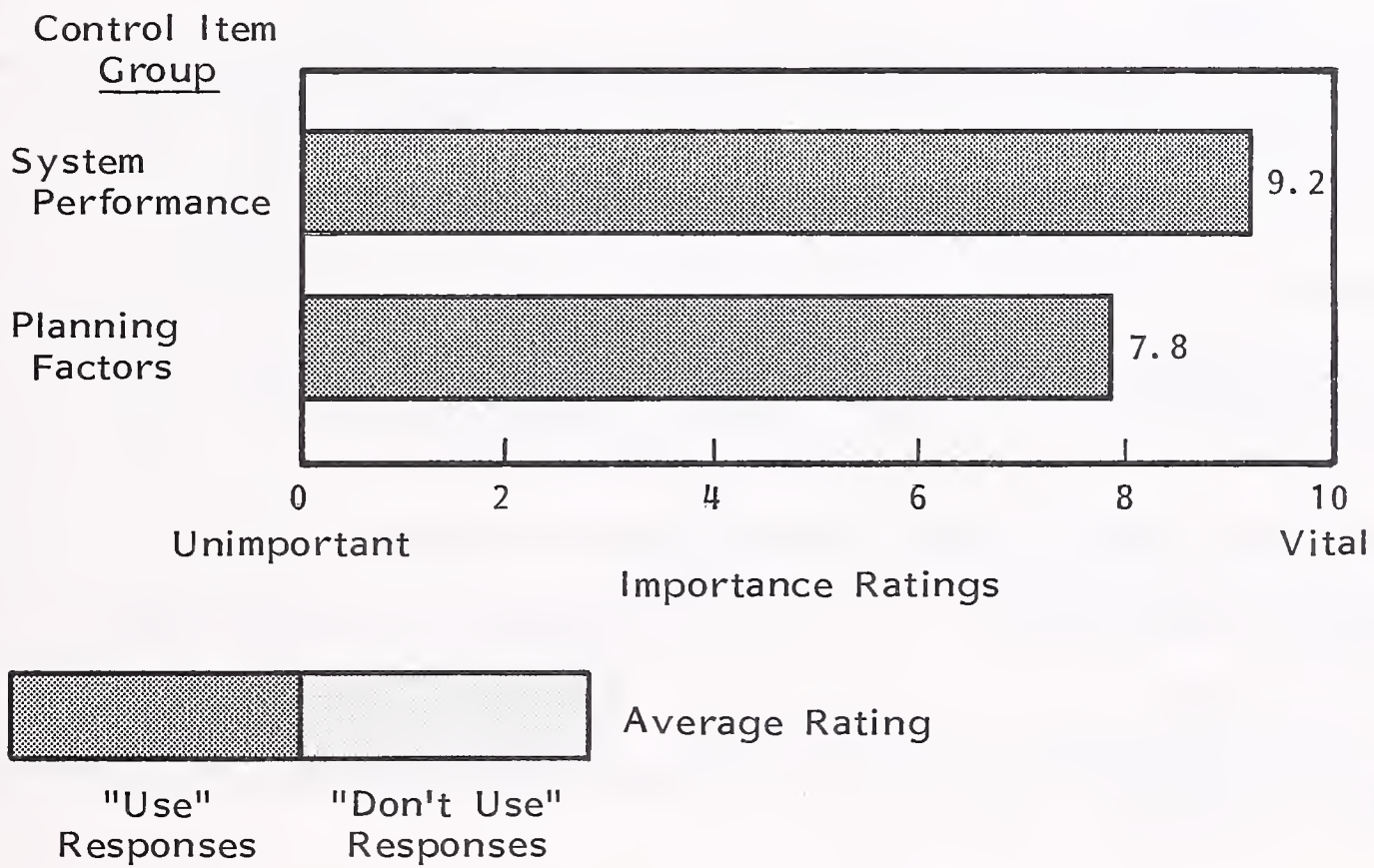
EXHIBIT IV-11

COMPUTER OPERATIONS CONTROL ITEM GROUPINGS

GROUP	ITEM #	GROUP	ITEM #
System Performance (23)		(System Performance, cont.)	
System uptime or availability	41	Operating system uptime	247
Job reruns	42		
Service interruptions per day	241	Planning Factors (4)	
Response time	242	Disk Utilization	43
Communications system uptime	243	System utilization trends	240
Job schedule performance	245	Variance from capacity plan	244
Peripheral uptime	246	Costs as percent of revenues	248

(   ) = number of use mentions

INPU
MEPD

- System performance was the key concern because market success depends very heavily on it.

    - All of the performance measures such as System Availability, Service Interruptions, and Response Time, received very high importance ratings.

    - One respondent said he was a slave to the equipment, but the real difficulty was the services business itself, a view shared by several other respondents.

    - Only a small number of respondents cited Planning Factor items as important controls. This area is complex, typically delegated, and addressed only on an exception basis.

- Development also received a relatively low number of overall responses. As shown in Exhibit IV-12, Product Quality and Schedule Performance items were rated very high in importance, followed closely by the resource group.

    - Over 40% of the survey respondents responded to Development items. All managers responding to this area cited Schedule Performance as their key control item.

    - Product Quality had a higher average rating but fewer total responses.

    - From the number of use responses shown in Exhibit IV-13, it can be seen that the respondents' primary involvement in development control is Schedule Performance monitoring.

- INPUT believes that the few quality and schedule items listed for development are insufficient to properly control it because they constitute very coarse controls.

INPUT

EXHIBIT IV-12

IMPORTANCE OF DEVELOPMENT CONTROLS

Control Item
Group

Importance Ratings

Unimportant ... Vital

Average Rating

"Use"
Responses

"Don't Use"
Responses

INPUT
MEPD

EXHIBIT IV-13

- 79 -
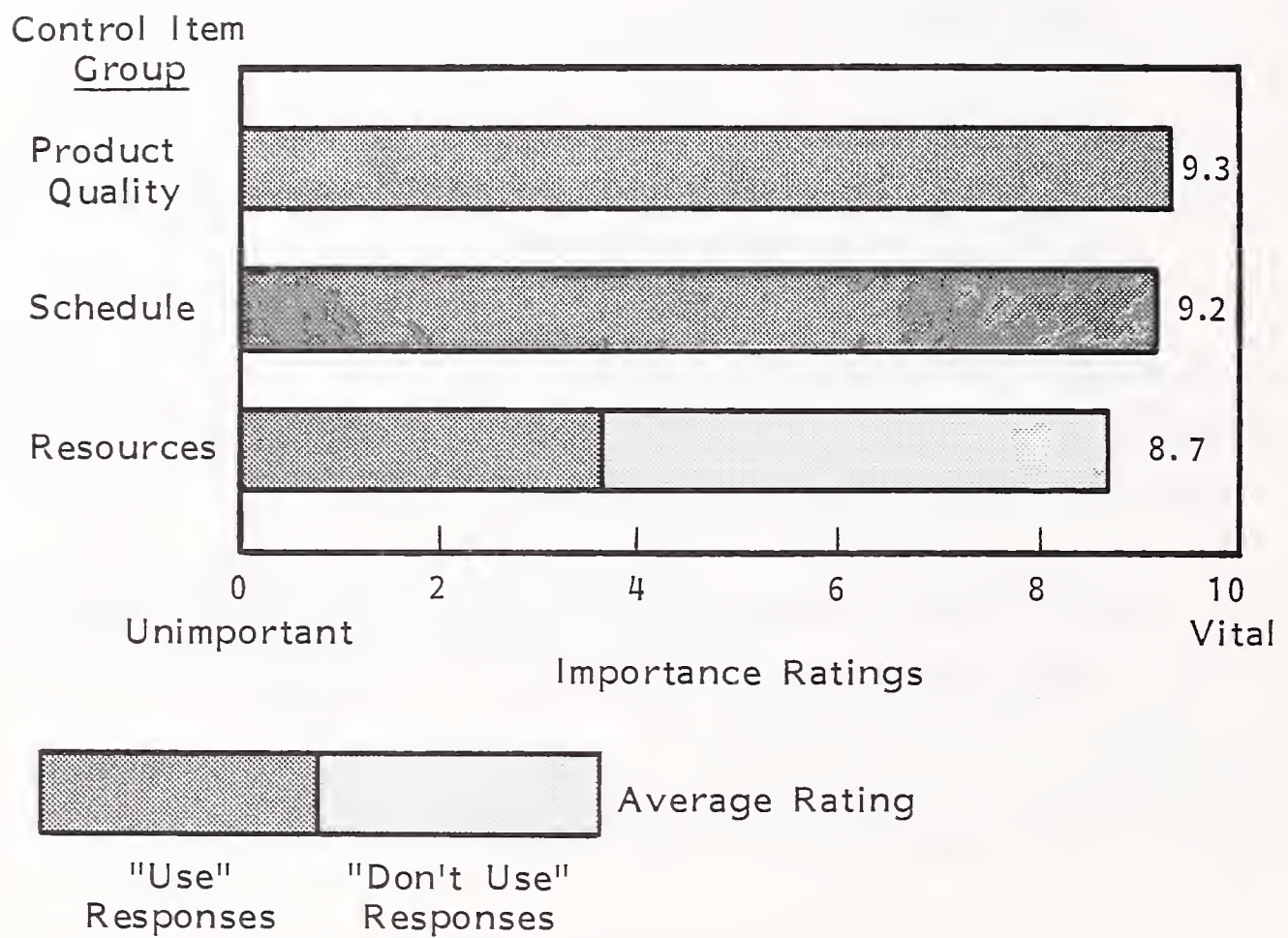
DEVELOPMENT CONTROL ITEM GROUPINGS

GROUP	ITEM #
Product Quality (4)	
Internal acceptance testing	211
Compliance with design specifications	213
Schedule (13)	
Schedule performance	33
Resources (7)	
Amount of computer resources used	34
Personnel turnover	35
Total resources per project	210
Expense as percent of revenues	212
Total costs	214

(   ) = number of use mentions

- 79 -

INPUT
MEPD

- An analogous situation would be to hope to control the sales area using only monthly revenues and order debookings.

- As discussed earlier in section IV.A.3., there is tremendous room for improvement in the control items for development, and that improvement should be aggressively pursued by all affected managers.

- Exhibit IV-14 depicts the fundamental situation in the professional services function: the control of people and money.

- However, Exhibit IV-14 should not be interpreted as showing the only items of control used by professional services managers. The items listed in Exhibit IV-15 were cited by respondents as unique to professional services.

  - Professional services executives also responded to control item usage questions for G&A, sales and marketing.

  - They expressed a high sensitivity to customer satisfaction and regular account reviews because they depend very heavily on their reputation and market image.

  - Since off-contract staff is a serious financial threat, this group of respondents also gave very high ratings to sales status control items.

G.   CONCLUSIONS AND RECOMMENDATIONS

- Discrepancies between the amount of control information used and the relative importance of that organization must be analyzed and resolved to stem the diversion of precious management resources.

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EXHIBIT IV-14

- 81 -

IMPORTANCE OF PROFESSIONAL SERVICES CONTROLS

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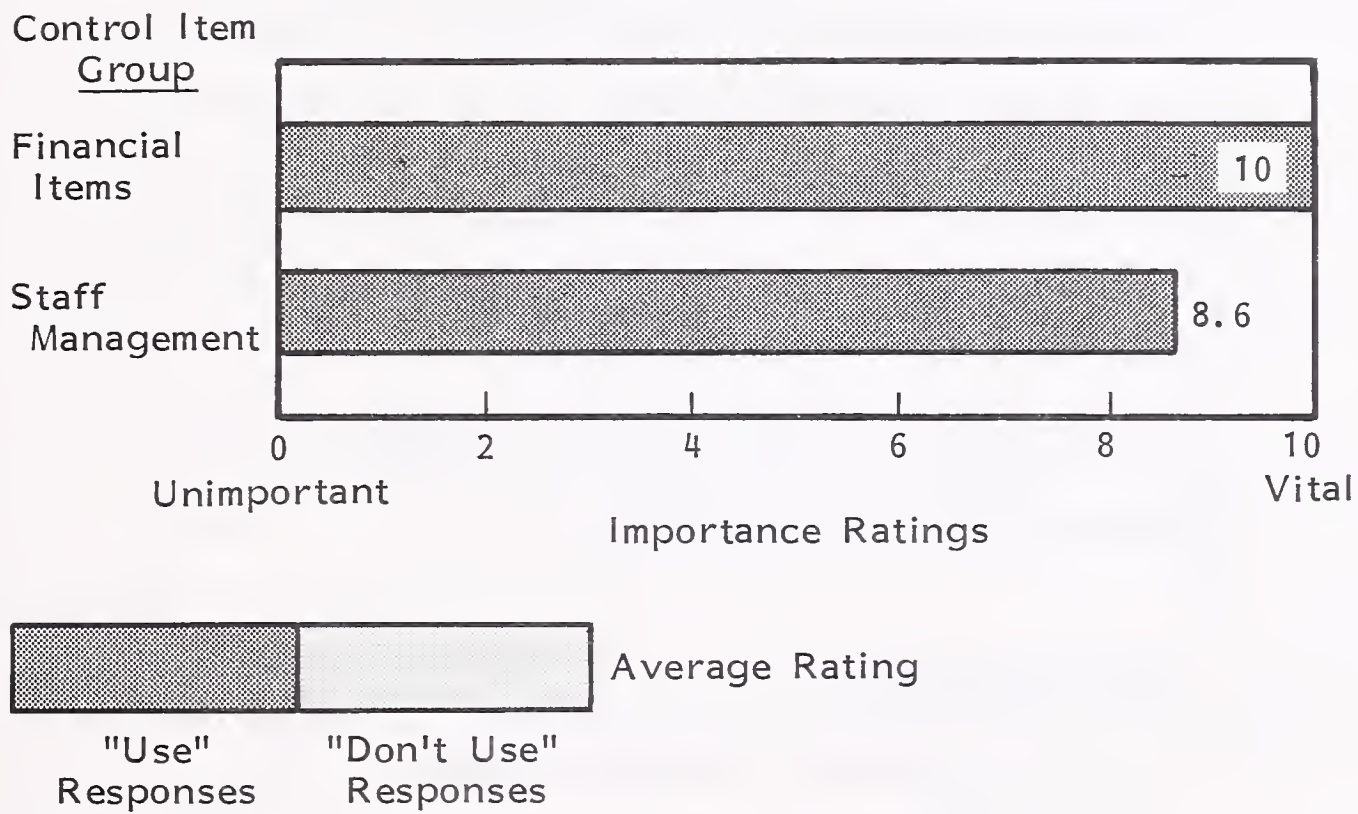
EXHIBIT IV-15

PROFESSIONAL SERVICES CONTROL ITEM GROUPINGS

GROUP	ITEM #
Financial Items (15)	
Direct-personnel-cost-to-fees-billed ratio	271
Gross mark-up by individual	272
Fixed price project status	273
Billable time	276
Overhead as percent of salaries	277
Gross margin by client, task, or project	278
Hours billed and not billed	279
Staff Management (7)	
Personnel utilization (direct-to-total-labor ratio)	270
Indirect-to-direct-headcount ratio	274
Management-and-marketing-to-professional-headcount ratio	275

( ) = number of use mentions

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- Managers should look at the balance between detailed historical information and forward-looking information they use in controlling their organizations.

    - The overall impression gained from the interviews is that the balance is badly tipped in favor of detailed historical data.

    - At best, this information tells what has already happened; it might or might not be a valid indicator of the future, yet it is heavily relied upon.

    - Managers in this situation should periodically reevaluate their goals and charter and ensure that they are dealing with the right mix of time perspectives in their control information.

        - For example, a heavy mix of historical control items can severely limit the forward-looking perspective needed to lead an organization and anticipate actions and opportunities.

        - Reliance on historical items will keep a manager locked into a reactive mode and thus degrade his performance.

    - Managers should also objectivly determine if they are using certain types of information because it is easier to obtain or because they don't want to expend the effort to improve it.

    - INPUT strongly advises a greater emphasis on planning and forecasting to give the executive more time to anticipate corrective actions and to reduce wasteful reacting.

- The adequacy of control systems reports must be evaluated and the true costs of the alternatives determined as accurately as possible. The frequent complaints heard in the interviews about the quality of information available to executives represent a costly situation that should be assigned a high priority for corrective action.

- 83 -

INPUT

V THE CONTROL PROCESS

A. INTRODUCTION

- This chapter looks at the control process:

    - The system that collects the data and structures the information.

    - The manager who uses the system to keep his organization on its defined course.

- This chapter also provides insights into the perspectives, priorities, methods, and needs of other executives in the industry. It will serve both as a source of new ideas and a basis for comparison.

- There are four basic steps in the control process:

    - Defining standards. Setting the criteria to judge if progress is satisfactory. An example would be the definition of monthly revenue targets comprising the annual revenue goal.

    - Measuring progress. Collecting the necessary information and applying the appropriate standards.

INPUT

-   <u>Evaluating findings.</u>   Analyzing results to determine the causes and cures for any discrepancies in progress.

-   <u>Identifying corrective actions.</u>   Selection of the best measures to correct the deviation from plan.

•   INPUT finds that when the term "control system" is used managers tend to think of information or reporting systems. The broader meaning, however, includes the manager, policies, procedures, methods, and all sources of information used in control. For this reason, all questions for this chapter were phrased very generally or referred to as the "control process."

•   The responses not only provided information on specific topics but also gave insights into each manager's perspective on controlling his organization.

•   The perspectives of successful managers are analyzed and highlighted to aid readers in evaluating their own performance and attitudes.

B.   INFORMATION SOURCES

•   This section analyzes the sources of information used in the control process in a broad sense through key indicators and in a narrow sense through the discussion of specific sources.

•   Key indicators are elements of information used by managers to warn them of long-range problems.

•   Both categories were used to assess:

-   Data used (the type, its source, and its effectiveness).

INPL

- Managers' perspectives (long- or short-term, level of detail, and whether they anticipate or react).

I. KEY INDICATORS

- Respondents were asked to list their key indicators or warnings of long-range problems. Their responses were sorted into three data types:

  - Performance data used for direct comparisons of results, such as revenue, compared to plan or expenses versus budget. This is hard or actual numeric data used in a well-defined structure or pattern. Little or no analysis is required to use it. It is usually historical in nature.

  - Trend data used to anticipate results or identify trends. It usually consists of a mix of hard performance data and soft or estimated data such as forecasts. Use of this data requires more judgment and analysis than performance data. Examples are sales forecasts, billing trends, and profit forecasts.

  - Broad data used to make analyses, usually with no set framework for the data or the analysis. It may include opinions, assessments, or other subjective, non-numeric data. Broad data requires the most use of analytical skills of the three types of indicators. Examples are market information, technology trends, and competitive analyses.

- Most of the responses mentioned trend data, as shown in Exhibit V-1. This is an expected response as managers attempt to anticipate their progress and allow more time to effect optimum corrective actions.

- The most frequently mentioned key indicators in this group were the Prospect Pipeline and Sales Trends, as shown in Exhibit V-2. The indicators are listed in order of their frequency of mention.

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EXHIBIT V-1

KEY INDICATORS MENTIONED BY TYPE OF DATA
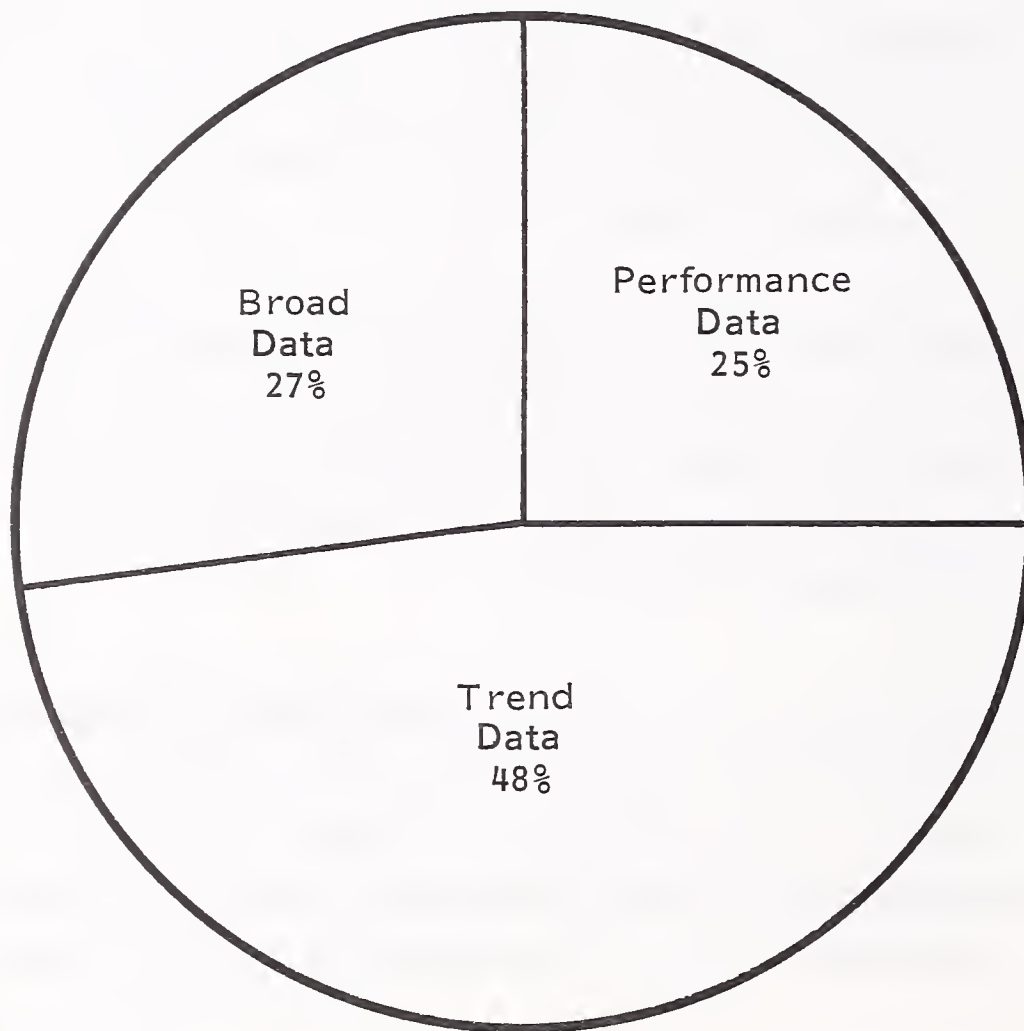
Percent of Total Mentions

EXHIBIT V-2

KEY INDICATOR MENTIONS - TREND DATA

KEY INDICATORS	FREQUENCY OF MENTIONS
Prospect Pipeline	6
Sales Trends	6
Sales Forecasts	4
Average or Top Client Billing Trends	2
Billing or Revenue Trends	2
Product Maintenance and Performance Trends	2
Revenue Mix Trends	2
Cash Flow Forecasts	1
Demonstration or Benchmark Backlog	1
Financial Trends	1
Margin Trends	1
Number of Customers Trend	1
Order Close Rate Trends	1
Pricing Trends	1
Profit Forecasts	1
Proposed Business Backlog	1
System Utilization Trends	1

INPUT

- Prospect Pipeline mentions were evenly distributed between Type A and B respondents.

- Sales Trends were mentioned almost exclusively by Type A respondents.

- No Type C respondents mentioned using information concerning the Prospect Pipeline or Sales Trends as key indicators.

- Type A respondents tended strongly to mention items occurring early in the business cycle, items they can drive or control rather than react to, such as Order Close Rate and Proposed Business Backlog.

- Type C respondents focused on items that require a reactive response or involve multiple, dependent elements and are difficult to analyze. Profit and Cash Flow Forecasts may provide some advance warning but will require additional analysis before a clear picture can be obtained of the causative factors.

- Broad and performance data received approximately the same number of responses.

- The most frequently mentioned broad data items were Competition and Market or Industry, as shown in Exhibit V-3.

- It is significant to note that Market or Industry indicators were only mentioned by Type A respondents.

- Several Type C respondents mentioned Competition as a key indicator but did not mention indicators dealing with the market or industry they were doing business in.

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EXHIBIT V-3

- 91 -

KEY INDICATOR MENTIONS - BROAD DATA

KEY INDICATOR	FREQUENCY OF MENTIONS
Competition	6
Market/Industry	6
Technology Trends	3
Lost Prospect Analysis	2
Lost Business Analysis	1
Morale	1

INPUT

- Performance data items used as key indicators are shown in Exhibit V-4 and mostly represent historical or, at best, current results.

- INPUT believes that these items may be of use in the control process, but most are of limited value as long-range indicators. They represent a point in time too late in the business cycle to serve as adequate warnings of future problems.

- An examination of the data shows that Type A respondents used fewer performance data items than would be expected according to the predicted distribution of responses.

  - They used the predicted number of trend data items but showed a definite preference for broad data items.

  - As mentioned earlier, performance data items basically tell the manager what has happened; this is of limited value as a warning of future problems.

  - Trend and broad data have respectively longer outlooks and hence better fit the requirements for future warnings.

- Type C respondents tended to use as indicators data items that represented events occurring late in the business cycle, such as expense-to-revenue ratios and order backlogs.

  - This tendency was shown in Type C respondents' uses of all classes of indicators (performance, trend, and broad), showing a strong need to develop a longer term perspective.

- All managers should periodically review their key indicators to determine how well they fit the time perspective of the organization. Overdependence on one particular type will prevent the balanced perspective necessary for continued success.

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EXHIBIT V-4

KEY INDICATOR MENTIONS - PERFORMANCE DATA

KEY INDICATOR	FREQUENCY OF MENTIONS
Receivables	3
Project Plans	3
Sales Forecast Accuracy	2
System or Order Backlog	2
Budgets	1
Capacity Plans	1
Expense/Revenue Ratios	1
Inventories	1
Staffing Requirements	1
System Performance	1
Training Backlog	1

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2.   SOURCES OF CONTROL INFORMATION

- Respondents were asked to rate the effectiveness of six different sources of control information:

  - Computer-generated financial reports.

  - Manually prepared financial reports.

  - Activity or progress reports.

  - Formal reviews (structured format based upon prepared presentations).

  - Informal reviews (such as staff meetings or as-required meetings).

- Exhibit V-5 shows that informal reviews are rated as the most effective source of information for all respondents combined, followed by computer-generated financial reports.

- Some variability was detected in respondent ratings organized by organization size, as shown in Exhibit V-6. This indicates the effect of the organizational environment on the manager.

- Managers of small organizations rated computer-generated financial reports higher than they rated manually prepared financials.

  - Their information needs are generally less involved than those in larger organizations, and they are more aware of activities, thus making special reports and analyses less important.

  - Thirty-eight percent of the small-organization respondents reported using manually prepared financial reports compared to 60% of the medium and large organizations.

- 94 -

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EXHIBIT V-5

EFFECTIVENESS OF CONTROL INFORMATION SOURCES

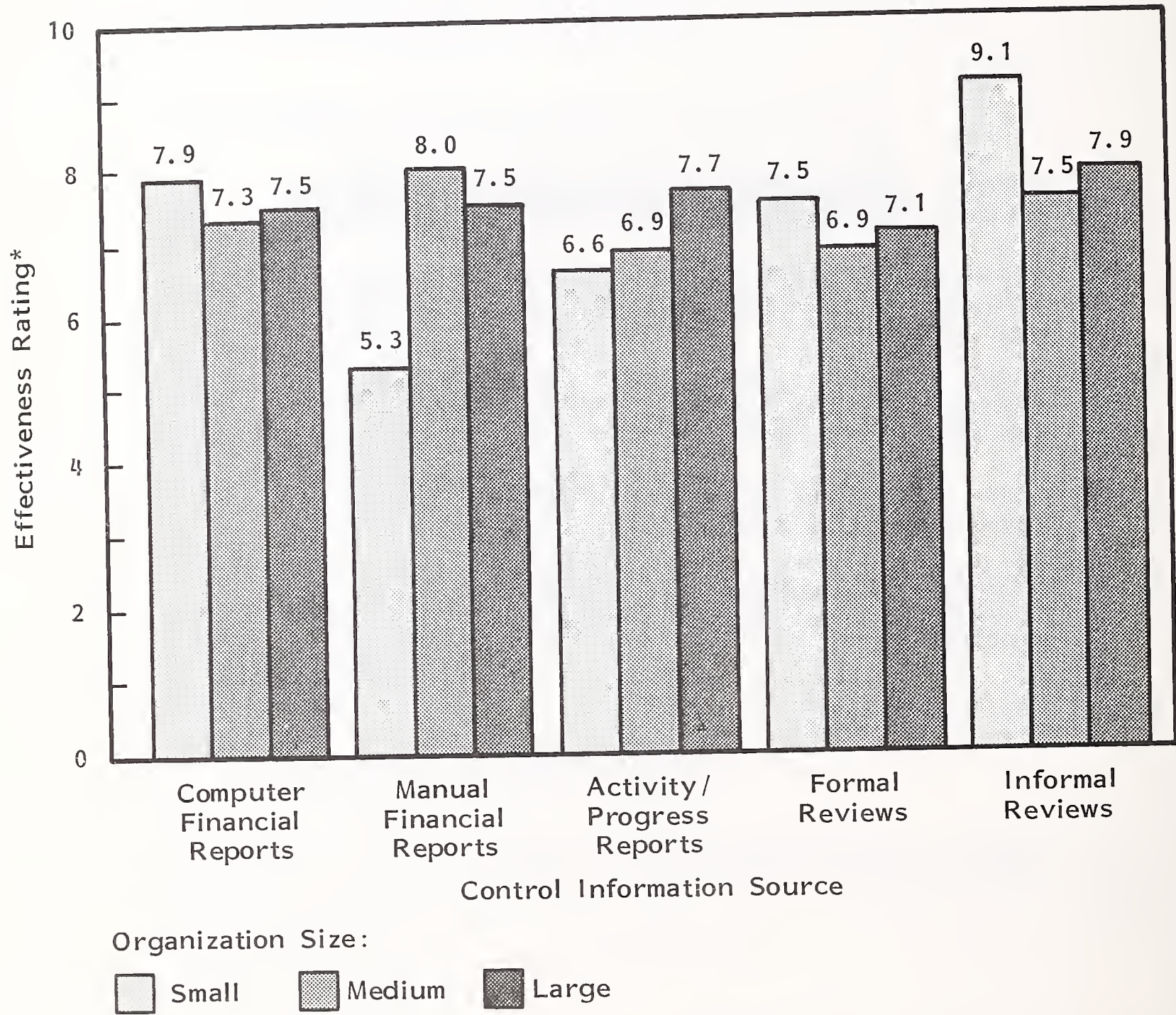* Where 0 is Totally Ineffective and 10 is Totally Effective

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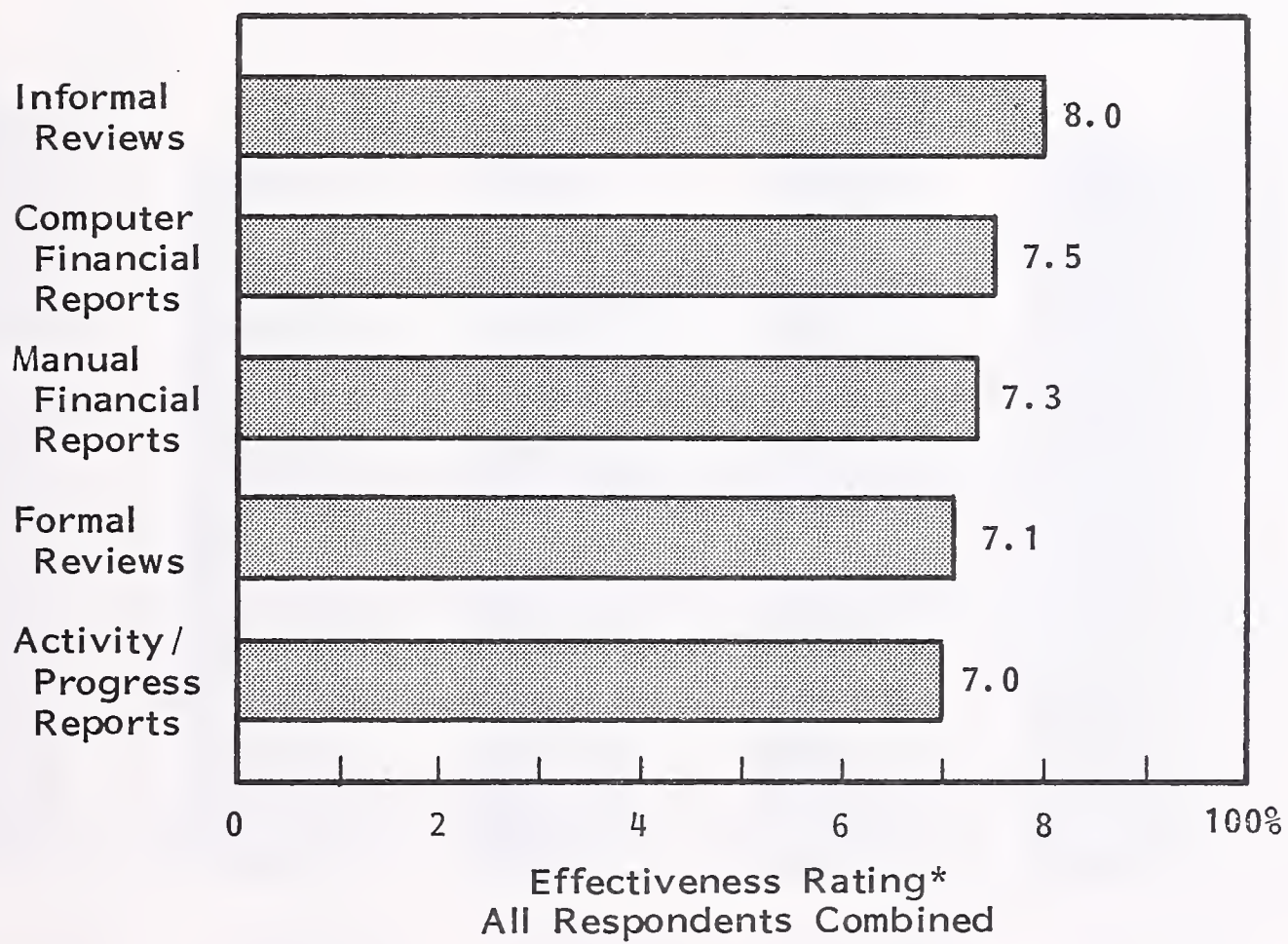
EXHIBIT V-6

EFFECTIVENESS OF CONTROL INFORMATION SOURCES –
RESPONDENT RATINGS BY ORGANIZATION SIZE

* Where 0 is Totally Ineffective and 10 is Totally Effective

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- Several respondents rated manually prepared financials higher than computer-generated ones because of problems with their reporting systems. Manually prepared reports were their only source of concise information.

- Accounting systems form the basis for many, if not most, management reporting systems today. However, they are designed to provide historical information, which in most cases is delivered too late to be an effective control.

    - The president of a large, successful software company made a sound distinction in the use of computer-generated reports, rating them at 8 for forecasting and 5 for operations control.

    - He made use of manually prepared financials for specially tracked items and rated them at 8 for this purpose.

    - The president of a medium-sized, successful software company rated computer-generated financials at 5 because "They tell you history."

- Responses to activity or progress reports showed a definite influence due to organization size, with larger organizations tending toward a more structured approach to information collection.

- Managers of small organizations showed a clear preference for informal reviews, as could be expected. No trends or correlations could be discerned in any other groupings, however. The range of responses was very wide overall.

- Some respondents' comments, as shown in Exhibit V-7, illustrate very well the personal style of reviews.

- These findings illustrate that the effectiveness of control information is dependent more on the executive's personal style and preference than on the type of source.

INPUT

EXHIBIT V-7

EFFECTIVENESS OF FORMAL AND INFORMAL REVIEWS

"Formal reviews produce good solid information. People must prepare for this type of review. Very probing."

"Formal reviews create too much pressure on both the reviewer and reviewee."

"People must prepare to give good information."

"Show-and-tell reviews (formal) are a waste of time. Only effective when focused on the future or progress against plan."

"Formal reviews are too after-the-fact."

"Formal reviews are more selling presentations than a good source of control information."

"Informal reviews tend to have less forethought and preparation. Provide less reliable information and cover too much territory."

"People-to-people interactions in informal reviews may affect communications."

"Formal reviews are too stiff. People tend to compete with each other."

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- Many reporting systems lack the flexibility to accomodate different management styles and needs and thereby force executives to other, less cost-effective measures to obtain their information.

  - Expensive automated systems are almost always accompanied by other types of systems, such as reviews, because of untimeliness, illegibility, inaccuracy, or other flaws.

  - The penalty paid for this situation is high enough to be of concern to both suppliers and users of control information systems.

  - The overlap of information sources used by most managers is not only expensive, it can lead to confusion and erroneous conclusions due to multiple, uncoordinated presentations of the same data, often in different formats and contexts.

C. CONTROL PROCESS STATUS

- Respondents were asked how their control process could be improved in order to get an indication of its present status and determine common areas for improvement.

- As mentioned at the beginning of this chapter, the term "control process" was used in order not to limit the respondent's thinking to one particular aspect of control, such as the information system. Since the information system is such a vital part of the process, however, it received the most mentions.

- Approximately 40% of the responses cited a need to improve or modify the control system, while the remainder were evenly distributed between the needs to improve either system inputs or system outputs, as shown in Exhibit V-8.

INPUT

EXHIBIT V-8

RESPONDENT PERCEPTIONS -
CONTROL PROCESS IMPROVEMENTS
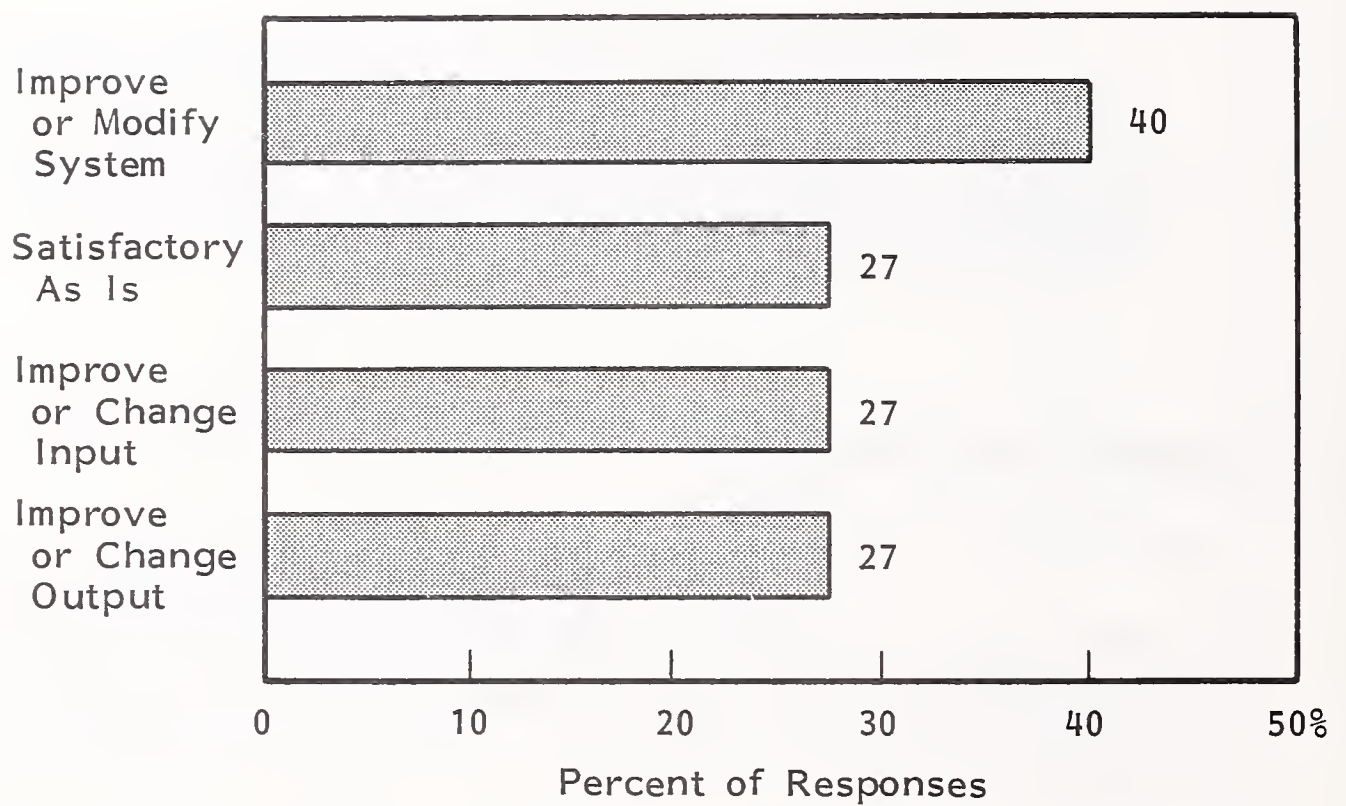
NOTE: Percentages total to more than 100% due to multiple responses by some respondents.

- Over one-fourth of the respondents felt their control process to be satisfactory as is. All were managers of large or medium organizations and apparently had well-developed systems and procedures.

- Exhibit V-9 profiles in four categories the respondents' needs for control improvements.

- The overwhelming need expressed was for better information. Some of the quality complaints dealt with accuracy, clarity, and timeliness of financial reports.

- The needs centered on data as the most needed type of information as opposed to processed information from reports or synthesized information such as plans and forecasts. Respondents were concerned with obtaining better data on a wide variety of topics including customer support, system performance, field sales, and cost detail.

- Organizational performance data was the most frequently cited information subject need. The sales area received the highest number of mentions and represents an area of frustation for managers in their attempts to obtain reliable, timely information.

  - One company president expressed the need for better sales forecasts and projections and said he would like to be able to have confidence in them.

  - His frustration in this matter was evident and is shared by many managers who attempt to apply traditional control criteria to an area of such high uncertainty.

- Most of the respondents felt their problems were mainly due to the information source. Only 30% cited the information system as the source of their

- 101 -

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EXHIBIT V-9

RESPONDENTS' NEEDS FOR CONTROL IMPROVEMENTS

Percent of Responses for Each Category

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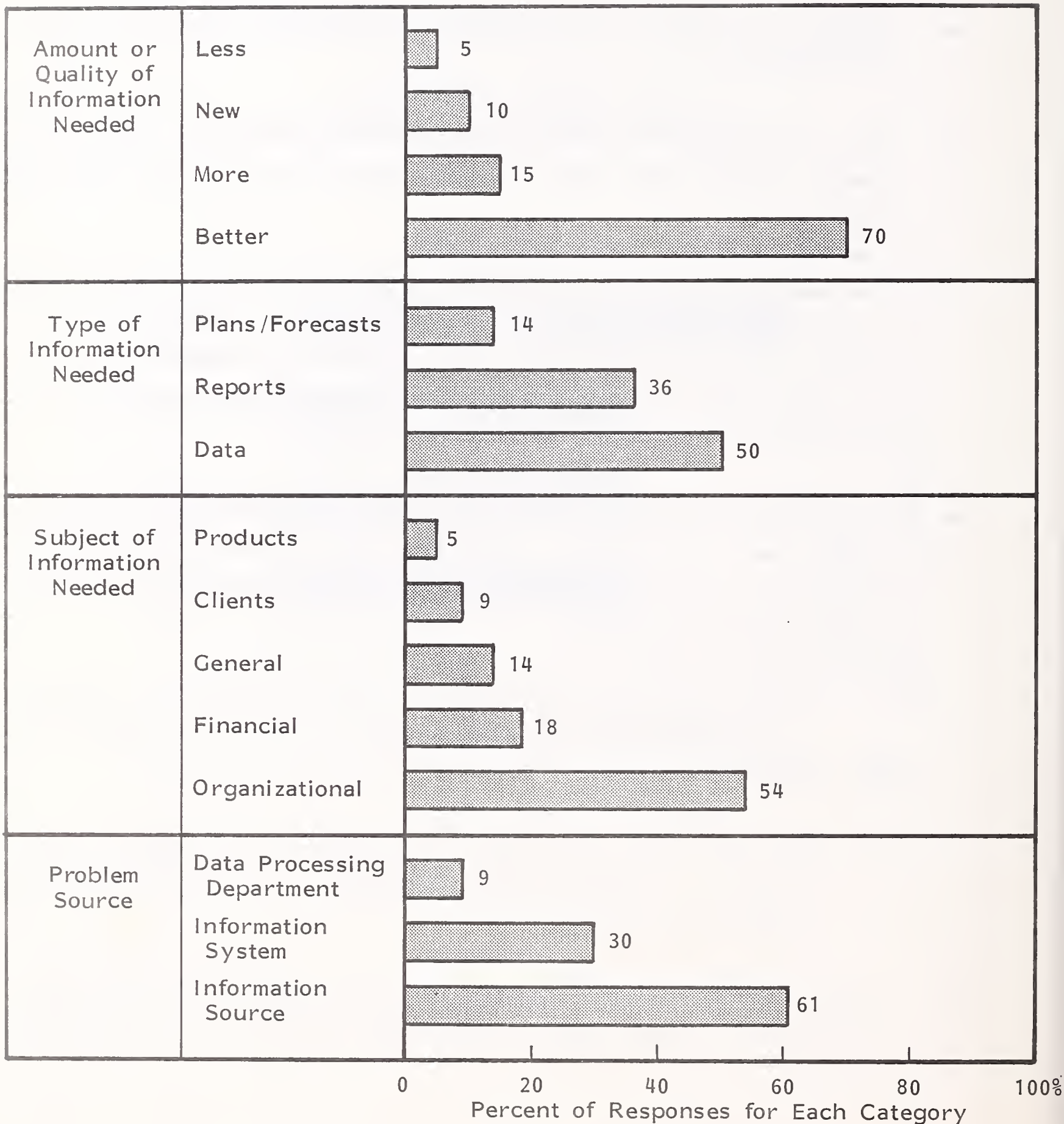
problems. Nine percent cited the data processing organization for a number of problems, including poor performance in data collection and report generation and the quality of the accounting system.

- A number of respondents mentioned the need for more timely reports and the desire to have on-line access to control information. One of the key driving forces in this need is the time lag due to the month-end accounting close cycle.

- It is significant to note that a number of respondents who complained about the quality of their control reports are employed by firms who sell reporting software or services.

  - The problem here appears to lie not in the quality of the reporting system but in the priorities given to the information needs of individual managers.

  - One executive who uses his own company's product cited a strong need to receive his information in meaningful business terms rather than accounting terms.

  - This lack of flexibility in providing executives with the proper information can cost a company untold amounts in both direct and indirect costs and lost opportunities.

- One respondent described an apparently sophisticated on-line system with a choice of 18 different management reports based on daily updates and data entry.

  - The system was developed in-house by this medium-sized vendor of engineering software and systems.

- 103 -

INPUT

- This underscores the importance of a commitment to resolve this issue since they had less application expertise and fewer resources than the larger companies who cited this problem.

- Some respondents apparently have their reporting systems problems under control and are seeking improvements in the more forward-looking and less well defined areas of control. For example:

  - One executive is looking for indices of performance for input into the budgeting and control processes.

  - Another respondent mentioned putting more resources on improving estimating and planning, which he termed an art form.

  - Several respondents saw a need for more automation in the forecasting function to make it more efficient and structured.

- Executives must make an ongoing attempt to assess the true cost penalty of ineffective control systems.

- The conflict between individual managers' needs for flexibility and the inflexibility of most information systems must be resolved in favor of the manager to be cost effective for the corporation.

D. FUTURE CONTROL CHANGES

- Respondent projections on future changes in the way they control their organizations fall into four major areas, as depicted in Exhibit V-10.

- Responses in the control/management area were from all organization types and sizes and dealt with obtaining better control or managing more closely in the future.

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EXHIBIT V-10

FUTURE CHANGES IN CONTROL

Areas of
Major Change

Control/Management	26
None/Uncertain	22
Organization	22
Information Systems	17
Subordinates	9
Other	4

Percent of Total Responses
0   5   10   15   20   25   30%

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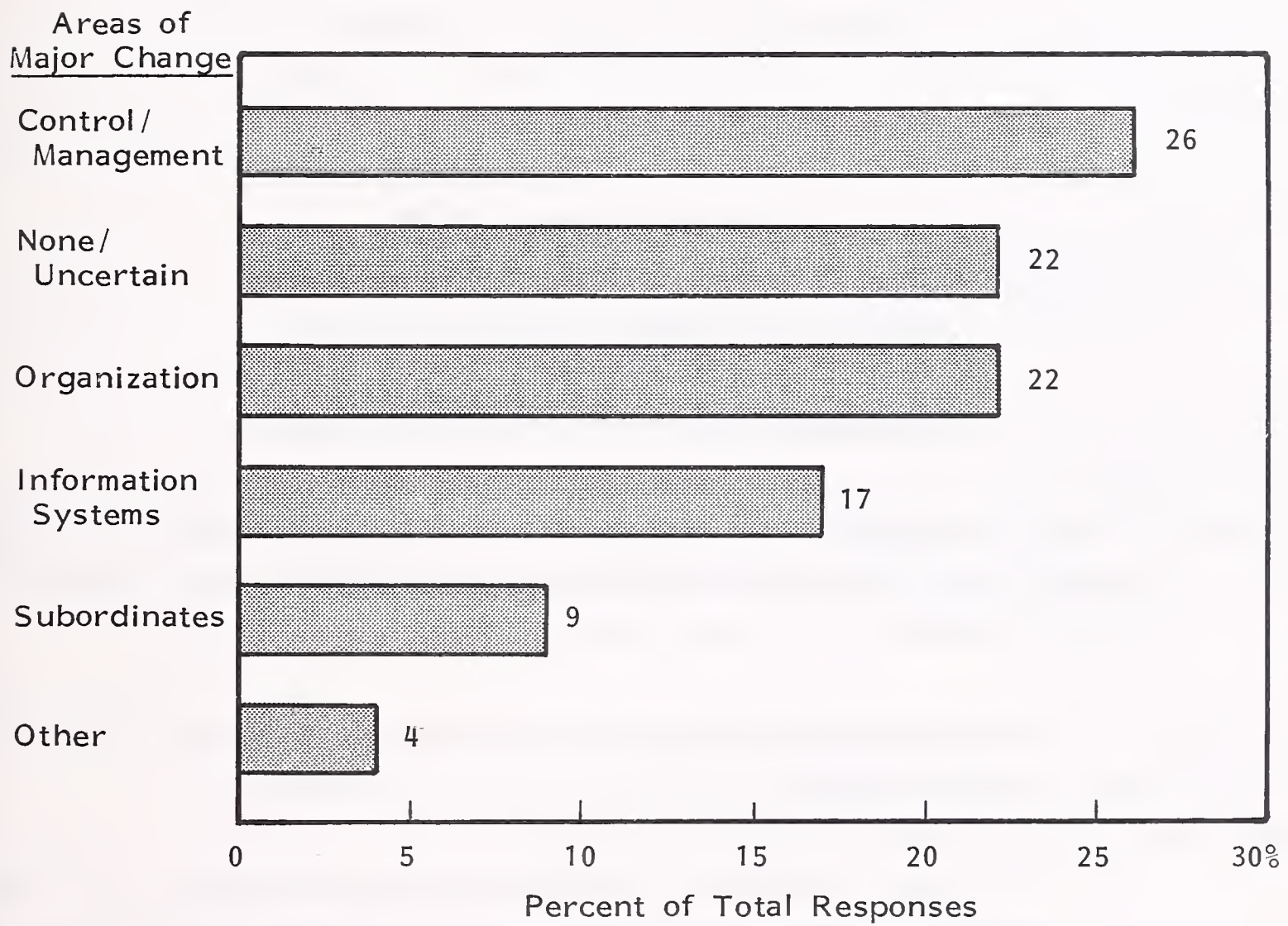
- Specific departments mentioned included development, marketing, sales, and operations.

- Some specific improvements mentioned include:

    . Better budgeting and control procedures.

    . Keeping organizations smaller and more segmented.

    . Instituting quality control groups.

    . More accurate tracking of marketing.

    . More formal control procedures.

    . More direct control over development.

- Thirty-three percent of the respondents (22% of the total responses to this question) saw either no major changes or were uncertain of the changes that would be required.

    - Seventy percent of these respondents were Type A organizations, the remainder Type B.

    - All Type C organization respondents had ideas of what it would take for them to cope in the future, so one would hope that they have the solution identified to reverse their trend.

- Organization changes were also seen as a future activity to improve control. Some of the reasons cited were to accomodate rapid growth overall or in a new product area, to shift the company emphasis, or to make it more efficient.

INP

- Forty percent of the responses in the organization area dealt with decentralization to get control responsibilities at a lower level for more responsive control.

- Some responses dealt with improving the information system and budgeting, but most cited on-line information systems.

    - It appears that most of these systems deal with faster access to primarily financial data, which moves their control process further ahead in the business cycle but still keeps it in a historical context.

    - More attention must be given to rapid access of information difficult to organize and capture. This information usually deals with the organization's leading-edge activities of sales and marketing.

- The category with the next to fewest responses dealt with upgrading subordinates, getting them more involved in the process, and furnishing them with more information. All of these responses were from successful organizations who apparently have their control processes fairly well in hand and can begin concentrating on upgrading their people.

- Once the direction has been established for resolving the immediate and short-term control process problems, executives must turn their attention to the future. Even though they are highly uncertain, future needs must be anticipated and planned for.

    - The lack of a flexible, evolving control system can be a major barrier to growth and profitability.

    - Resources expended on the total control system must be regarded as an essential investment.

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E.   THE MANAGER'S IMPACT ON PERFORMANCE

• This issue was researched to determine the respondents' perceptions of their impact on organization performance due to the way they control.

• The responses shown in Exhibit V-11 indicate that 80% feel they are responsible for either "very much" or "much" of their organization's performance.

• Many of the managers rating their impact as "much" or "very much" see their exercise of control as the dominant factor in their organization's performance and expressed their opinions in very clear terms:

    - "Was uncontrolled before and lost money. Is profitable now - control was the difference."

    - "Control doesn't happen by itself, it takes the manager."

    - "One hundred percent of performance is due to control. It lets my subordinates know what is expected of them."

    - "Would be in worse shape without good controls. The present economy leaves no room for error."

• Other respondents had less strong feelings for their role in organization performance.

    - Some saw the way they control as only one aspect of their contribution to organization performance.

    - One company president saw his contributions in the way he motivated and directed, the environment he created, and the way he planned.

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EXHIBIT V-11

RESPONDENTS' INFLUENCE ON ORGANIZATION PERFORMANCE

INPUT
MEPD
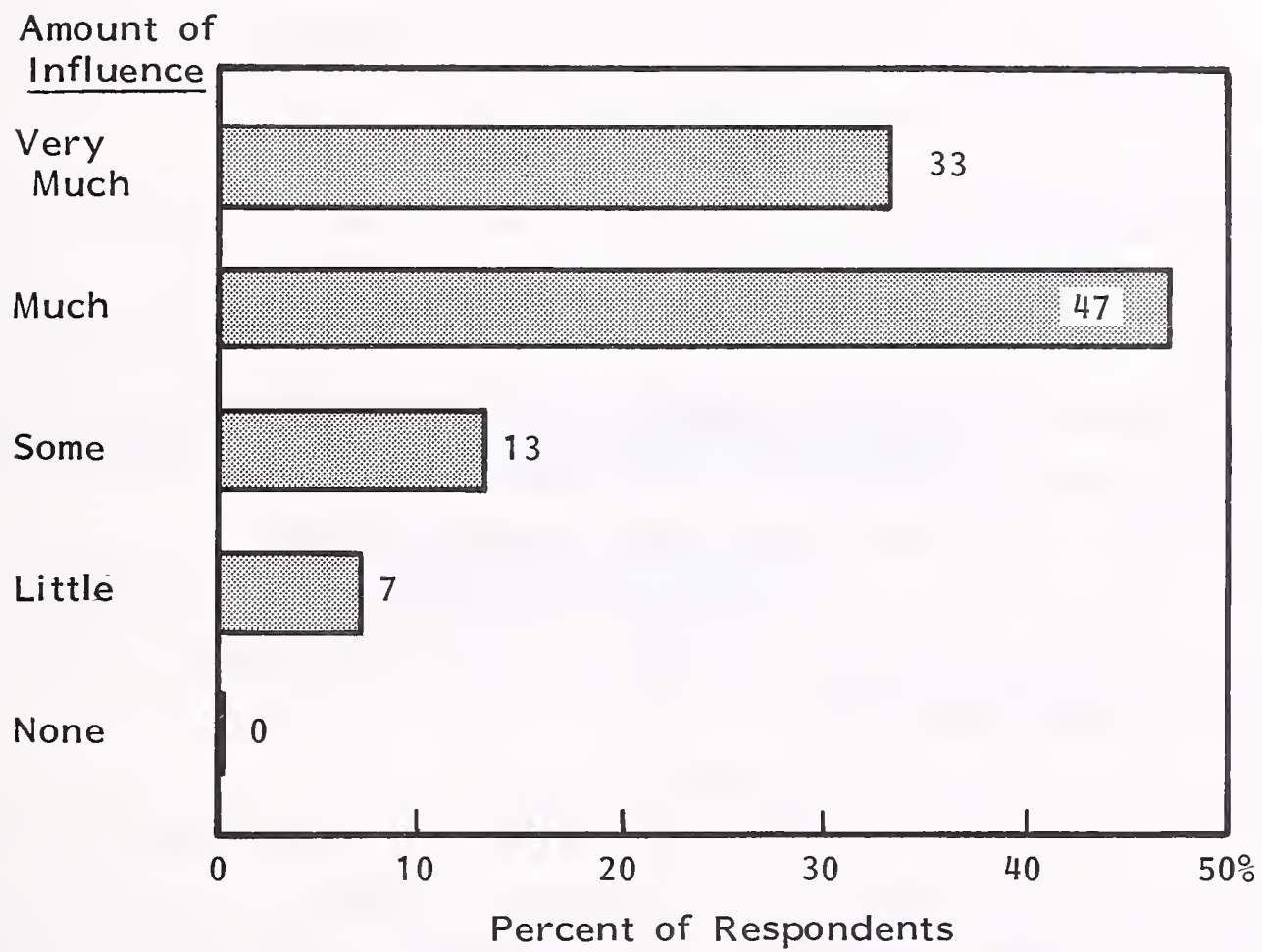
- Another president saw as his responsibility the setting of clear objectives at low levels, a view agreed to by another president who said the real control occurs below him.

- One executive offered the insight that his control has a great long-term impact but less of a short-term one. He feels this is due to the lessened effect controls have once events have been put in motion.

- Furnishing guidance or leadership as opposed to direct, personal control seems to be more prevalent with senior executives.

- As shown in Exhibit V-12, there is a noticeable trend for the more senior executives to attribute less impact to the way they control.

- Ninety percent of the respondents below the senior executive level saw their performance contribution as much or very much. This can be compared to 69% for all senior executives and 51% for presidents.

  - Managers should insure that their ratings are realistic and not based on emotions or ego.

  - If a manager has allowed his influence on performance to become "very much," then he may be doing his company a disservice by making himself indispensable. He could also be robbing his subordinates of the opportunity to learn through participation in the control process.

  - Strongly involved managers should take note of the opinions of the more senior executives. They should periodically reassess their thinking and their position in the control process to avoid over-control and stifling of performance of their subordinates.

INPl

EXHIBIT V-12

PERFORMANCE INFLUENCE RATINGS
BY ORGANIZATION LEVEL
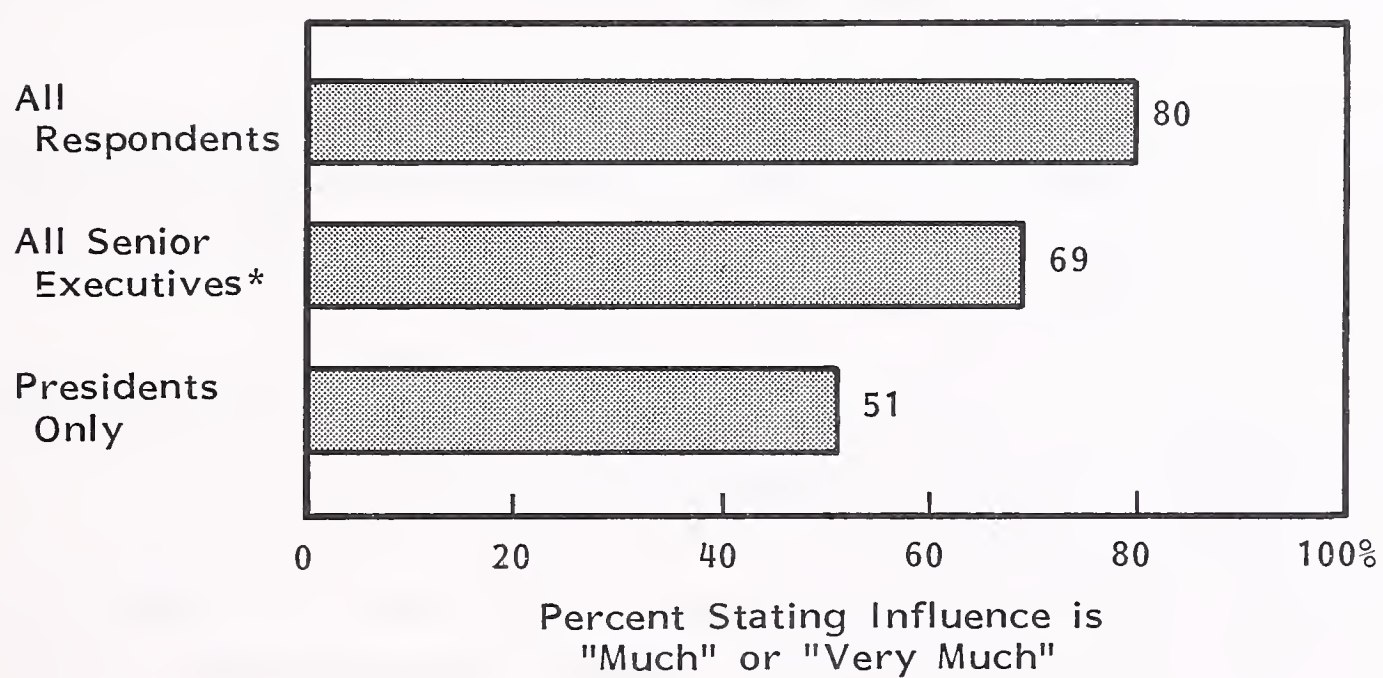
* Includes presidents, CEOs, COOs, and other respondents with general management responsibilities for self-contained, autonomous organizations.

INPUT
MEPD

F.   CONCLUSIONS AND RECOMMENDATIONS

- It is clear from the research that information systems are generally inade-quate for the control task and are not keeping pace with organizational needs. This is ironic since the respondents are all involved in selling informa-tion systems of one type or another.

    - Managers can of course change sources of control information to suit their needs if the sources are under their direct control. In many cases, respondents expressed dissatisfaction with information originat-ing outside their organization, such as financial reports prepared for the controller.

    - Anyone in this situation must take the initiative to make known his requirements as well as the cost to the corporation and potential risks resulting from the use of inadequate information.

- Executives must select key indicators of long-range problems that will give them as much advance warning as possible.

    - They should also objectively analyze what they consider to be long range. From some of the responses, long range apparently meant only a month or so - hardly the perspective needed to successfully manage in this industry.

    - They must be alert for correlatives or performance indices that can be used as warnings, such as key customer billing patterns, shifts in the product revenue mix, or changes in the average sales time per order.

    - Subordinates and their staffs should be polled for their suggestions on key indicators since they have a more detailed perspective and should be more able to see correlations.

- 112 -

INPL

- It became clear in conducting this research that the use of information in the management process is a highly personal choice and is influenced more by an individual's style than other more definable attributes such as type of company or product.

  - Some environmental factors such as organization size or quality of reporting systems may influence the manager's ratings of information sources, but the greatest determinant is the manager himself.

  - Executives must make sure that personal preferences and comfort considerations do not cause an information source to be rejected.

  - A source may not be preferred by a manager, but it may be best for his subordinates or most effective for his entire organization. An example would be the manager who feels more comfortable with formal reviews but finds his subordinates can convey information more effectively with less preparation time in informal staff meetings.

- Numerous respondents reported problems with computer-generated financial reports. Many executives receive as control information unchanged or slightly reformatted accounting reports. They are often difficult to interpret and are of limited value for control purposes because of their historical nature. Revamped accounting reports are the only automated reports available to many executives.

- Executives should assign someone to investigate improvements such as new reporting systems, decision support systems, report generators, and executive work stations to enhance the value of the information they rely upon. Control information is too valuable to the executive to allow his needs to be subordinated to staff functions such as accounting or data processing.

INPUT

- Many respondents to this survey apparently have not given sufficient thought to their future control needs. Executives must see that time and resources are allocated to planning for the future or their control systems will become increasingly less adequate. A control system could seriously jeopardize organizational performance by hampering executive visibility and decision making.

- Executives should objectively evaluate their influence on the organization's performance. If they find it to be very high, then they should attempt to determine if this level of involvement is healthy for the organization. It is a very risky situation if a substantial part of any organization's performance depends on one person. This dependency should be diffused throughout the management team to lower the risk and offer growth opportunities for subordinates.

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VI CASE STUDIES

VI   CASE STUDIES

A.   OVERVIEW

- This chapter presents brief case studies of four respondents to this research.

    - All four are successful, established software vendors.

    - Three are medium-sized organizations; the fourth is large.

    - Three are Type A organizations; one is Type B.

- The case studies are presented to:

    - Give the reader a basis for specific comparisons as opposed to the combined results of multiple respondents.

    - Highlight some areas of agreement of successful vendors.

    - Allow readers to benefit from the insights of others.

- Case studies are presented both in a comparative way and as separate entities.

INPUT

- Some specific data are not disclosed to maintain respondent confidentiality. Respondents are referred to as W, X, Y, and Z..

I.   ORGANIZATIONAL ISSUES

- All organizations concentrated on software, with only one reporting another delivery mode revenue stream of more than 10% of total revenues.

- Revenue productivity is very high for two of the organizations at over $125,000 per employee, while one (organization X) is low at slightly over $50,000 per employee.

    - X's revenue productivity may be related to two factors: revenue sources and expense distribution.

    - Twenty percent of X's revenues result from professional services, which typically is less productive than the other delivery modes.

    - Additionally, X reports a third revenue stream of approximately 10%. Supporting multiple delivery modes may be diluting X's resources, leading to lower productivity.

    - X's expenses for the revenue-related functions of sales, marketing, and support are approximately 20% lower than the high productivity organizations' levels of over 50%.

    - Expense for revenue-related functions may be considered an investment that pays off in higher revenue productivity.

- All organizations ranked sales as the most important organization in the short term. Development was ranked number one for the long term except by Y who put product planning first and then development. X also mentioned planning but placed it second, behind development.

- 116 -

INP

- Organization W ranked sales as the most difficult to control, while the others chose development.

2.   THE CONTROL PROCESS

- All four organizations took a more future-oriented outlook than most respondents in selecting their indicators of long-range problems.

    - Three mentioned monitoring their business pipeline or prospect base so they could anticipate shifts in their sales performance and market needs.

    - Two mentioned market factors including competition and market forecasts.

    - Only one of the four mentioned an indicator based on historical data, and it was considered to be relatively unimportant.

- The preference for less structured information was also evident in their ratings of sources of information. All four gave low ratings to computer-generated financial reports, higher ratings to activity and progress reports, but reserved their highest ratings for face-to-face reviews.

    - One respondent commented that computer-generated financial reports rated an 8 for forecasting and planning but only a 5 for operations control - a point of view that should be considered by a number of the respondents to the survey.

- W was the only organization stating dissatisfaction with its control process and cited data problems. All others considered their processes to be satisfactory.

INPUT

- Future changes were seen by three of the organizations to consist of better control, while one saw the need for an organizational change.

3.   CONTROL ITEMS

- Because of the way in which respondents were questioned on the functional area control items, marketing was the only area responded to by all four organizations.

- Only one of them rated lost prospect analyses as highly important, the others rated them 4 or 5.

  - This seems to fit their general inclination away from historical, detailed information and toward more global, future information.

  - All four monitor market share and market penetration, rating the latter above the average of all respondents.

  - None of them monitors changes in customer profile.

B.   ORGANIZATION W

- W derives all of its revenue from software sales and has an annual per-employee-revenue productivity of over $125,000.

- W shows a slight bias toward short-term results, with slightly over 50% of its expense budget for sales/marketing/support and slightly over 10% for development.

- A strong customer support orientation is evident in the organization importance rankings, where support is second on both the short and long term. Sales is ranked first in the short term and development in the long term.

INP

- Sales is considered to be the most difficult organization to control. The reason given, "Difficulty in balancing compensation with results, that is, really paying for results."

- The key indicators to W are the prospect pipeline, the percent of pipeline closed (sold), and the trend and number of serious product bugs.

- W rates computer-generated financial reports and formal reviews as relatively ineffective sources of control information. Informal reviews were the most highly rated source.

- In keeping with an earlier comment about controlling sales, W cites the need for a better way to collect field sales data. Other control process improvements needed are more operationally accurate financial data and information in meaningful business, rather than accounting, terms.

- Future control changes include more direct control over development and better control over the field organization through better information.

- Control item responses of interest:

  - Very low ratings were given to Sales Order Backlog, Shipments, and Number of Installs Completed (items #53-55). These items were judged to be more important financially than operationally.

  - Order Debookings were considered to be very important.

  - Lost Prospect Analyses from marketing (item 9) were rated very low due to "poor data," an apparent result of the poor sales data problem stated earlier.

INPUT

- The support situation is monitored closely through the number of Serious Problems Outstanding (#183), and the number of Serious Product Bugs (#184). The number of Problems Resolved and the Time to Resolve them (#26 and 27) are rated fairly high, as is the amount of Computer Resources Used (#32).

C.   ORGANIZATION X

- X derives its revenue from three product modes: software (70%), processing services, and professional services.

- Revenue productivity is slightly over $50,000 per employee. Sales/marketing/support expenses are approximately 30% of revenue, about average for the software vendors in this survey.

- X shows a strong leaning toward the future and toward establishing a long-term business base. Development is well above the software average at over 20% of revenues.

  - Sales and marketing were listed as most important in the short term, with development and business planning most important in the long term.

  - Only this organization and organization Y mentioned planning as an important long-term organization.

- Development was cited as the most difficult organization to control because of the group size and the nature of the work. An additional point was raised that it is also difficult to know what to develop.

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- X derives its leading problem indicators from a long-range plan which "identifies company weaknesses." Comparisons are made between the plan and actual results and trends.

- A very good distinction was made by X who rated computer-generated financial reports an 8 for forecasting but a 5 for operations control.

    - All other sources were rated an 8 except for formal reviews, which received a 3.

    - Formal reviews are considered effective if focused on the future but weak for ongoing results. "Show-and-tell reviews are a waste of time."

- The present control process was rated as "a pretty good system." Future changes will be driven by growth, necessitating reorganization and probably decentralization.

- The manager of organization X feels he contributes much to the organization's performance by setting clear objectives at low levels and by pushing team effort and participative management.

- This long-term outlook probably results, at least in part, from a financial incentive based on return on assets over a several-year period.

- Control item responses of interest:

    - Sales items rated moderately high include plan performance items such as Forecasts, Quota Attainments, and Sales By Product (items #4-6). Others are Key Account Status (#7), Prospect Pipeline (#101), Cost Per Sale (#111), Bookings By Organization (#122), and Expense To Bookings Ratio (#123).

    - Market Share is growing in importance along with Market Penetration.

INPUT

- Lost Prospect Analysis is rated at mid-scale, while Customer Profile and the promotional items (#13-15) are not used.

- X measures promotional effectiveness by monitoring sales leads by promotional source. Another big item is number of seminars.

- In development, Compliance with Design Specifications is rated as highly as Schedule Performance. The Amount of Computer Resources Used is also a control item.

D.   ORGANIZATION Y

- Y derives 90% of its revenue from software sales, the remainder from professional services.

- No expense distributions were divulged by Y, but a strong long-term orientation was clear from ratings and comments.

  - Sales/marketing was ranked first in the short term, with product planning ranked first in the long term; development ranked second in both cases.

  - Development was ranked as the most difficult to control because of its status as a "dynamic and leading-edge environment."

- Y reports spending most of his time on product planning. His leading indicators are market information such as competitor sales and market forecasts, their backlog of demonstrations and benchmarks, and trends in the order pipeline.

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- Computer-generated reports received a 5 because they are historical.

    - The most highly rated information source was formal reviews at a 9. They are said to yield "good solid information" because they are conducted in a "very probing, no-nonsense" fashion.

    - Activity/progress reports were ranked next, followed by informal reviews at a 6 rating.

- The control process was rated as adequate by Y who saw his problem as finding ways to make the organization more productive rather than with the control process.

    - However, as the organization grows, Y predicts that he will be forced to depend more on control systems and less on individual contacts.

- He rates his contribution to performance as "little," stating, "organizational performance does not depend on controls, but how you motivate and direct, the environment you create, and planning."

- This long-term outlook is personal in origin and not encouraged by any financial incentives: Y is measured solely on profit.

- Control item responses of interest:

    - The only sales items mentioned were New-Name Accounts (#107) and Demonstrations and Benchmarks (#121); both were rated highly.

    - Market Share and Penetration are important as is the Prospect Profile and the Number and Source of Sales Leads.

    - Support activities and performance were rated very high and included Calls Received Per Month, Time To Respond, Problems Resolved, Time To Resolve, and Problem Backlog.

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- Customers Trained and Training Backlog were also rated very important.

- Development's Schedule Performance and Total Costs were both rated 10.

E.   ORGANIZATION Z

- This organization derives all of its revenue from software.

- Revenue productivity in organization Z is the highest of all respondents to this survey at over $150,000 per employee.

    - This corresponds with a very strong emphasis on sales/marketing/support, which is reported at over 50% of revenues.

    - While development is rated number two short term and number one long term, it is at the lowest expense level of all software respondents at less than 10%.

- Z closely monitors the makeup of the business pipeline and the individual companies in it as a leading indicator. Indicators external to the organization are gained by tracking competitors' performance.

- Informal reviews and manually prepared financial reports are the most effective sources of control information. Formal reviews were rated as the least effective source and were said to be "too stiff" with "people competing with each other."

- The planning and budgeting system was rated as poor but improving. Control process improvements focused on identifying indices of performance for both planning and control.

    - Models have been developed for a number of activities such as the sales cycle, sales productivity, and support; more are in the process of being developed.

    - Future changes will include better budgeting to form the basis for control and better control procedures. Efforts are also under way to display control information in a graphical form for clarity.

- Z rates his performance contribution as "some" and stated that it "will hope-fully go to 'very much' in the future."

- Z is compensated on profit, percent growth, and market share, which helps explain the strong emphasis on sales and interest in the market.

- Control items of interest:

    - Sales control items received very high ratings. Items tracked included Forecasts, Prospect Pipeline, Sales Cycle Status, Quota Attainment, Bookings Per Sales Representative, and Sales by Product. Key Account Status was rated 10 but was only used on an exception basis.

    - The concern over sales activities was also evidenced by the mention of monitoring new sales representatives' effectiveness.

    - Lost Prospect Analyses were rated a 10 but only on an as-needed basis, for "key ones."

INPUT

- While Market Share and Penetration are used, Sales Leads Generated, Cost Per Sales Lead, and Sales By Promotional Source are rated as more important. This makes sense since the latter items have a causal relationship to market share and penetration and thus are better items to control.

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APPENDIX A: DEFINITIONS

APPENDIX A: DEFINITIONS

A.   REVENUE

- <u>NONCAPTIVE INFORMATION SERVICES REVENUE</u> - Revenue received for computer services provided within the United States from users who are not part of the same parent corporation as the vendor.

- <u>CAPTIVE INFORMATION SERVICES REVENUE</u> - Revenue received from users who are part of the same parent corporation as the vendor.

- <u>TOTAL INFORMATION SERVICES REVENUE</u> - Revenue received from services provided by vendors which perform:

    - Data processing functions using vendor computers (processing services).

    - Services that assist users to perform such functions on their own computers (software products and/or professional services).

    - A combination of hardware and software, integrated into a total system (integrated systems).

- <u>OTHER REVENUE</u> - Revenue derived from lines of business other than those defined above.

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B. SERVICE MODES

● PROCESSING SERVICES - Remote computing services, batch services, and processing facilities management.

   - REMOTE COMPUTING SERVICES (RCS) - Provision of data processing to a user by means of terminals at the user's sites(s) connected by a data communications network to the vendor's central computer. There are five submodes of RCS:

      . INTERACTIVE (timesharing) - Characterized by the interaction of the user with the system, primarily for problem-solving time-sharing but also for data entry and transaction processing: the user is on-line to the program/files.

      . REMOTE BATCH - Where the user hands over control of a job to the vendor's computer, which schedules job execution according to priorities and resource requirements.

      . DATA BASE - Characterized by the retrieval and processing of information from a vendor-maintained data base. The data base may be owned by the vendor or a third party.

      . USER SITE HARDWARE SERVICES (USHS) - These offerings provided by RCS vendors place programmable hardware on the user's site (rather than the EDP center). USHS offers:

        - Access to a communications network.

        - Access through the network to the RCS vendor's larger computers.

        - Significant software as part of the service.

- 128 -

• <u>VIDEOTEX</u> - A variant of interactive remote computing services.

- Access may be through cable television systems as well as ordinary telephone lines.

- The display is a television set equipped with a keypad or typewriter keyboard and special circuitry.

- The user may not create programs on the remote computer.

- The user may query or enter transactions to the remote computer through menu-driven software.

- Prestel and QUBE are examples of videotex.

- <u>BATCH SERVICES</u> - This includes data processing performed at vendors' sites of user programs and/or data which are physically transported (as opposed to electronically by telecommunications media) to and/or from those sites. Data entry and data output services, such as keypunching and computer output microfilm processing, are also included. Batch services include those expenditures by users who take their data to a vendor site which has a terminal connected to a remote computer for the actual processing.

- <u>PROCESSING FACILITIES MANAGEMENT (PFM)</u> - (Also referred to as "Resource Management" or "Systems Management.") The management of all or part of a user's data processing functions under a long-term contract (not less than one year). This would include both remote computing and batch services. To qualify as PFM, the contractor must directly plan, control, operate, and own the facility provided to the user, either on-site, through communications lines, or in a mixed mode.

INPUT

- <u>PROFESSIONAL SERVICES</u> - Made up of services in the following categories:

    - <u>EDUCATION SERVICES</u> - EDP products and/or services - related to corporations, not individuals.

    - <u>CONSULTING SERVICES</u> - EDP management consulting and feasibility studies, for example.

    - <u>PROGRAMMING AND ANALYSIS</u> - Including system design, contract programming, and "body shopping."

    - <u>PROFESSIONAL SERVICES FACILITIES MANAGEMENT (PSFM)</u> -The counterpart to processing facilities management, except that in this case the computers are owned by the client, not the vendor; the vendor provides people to operate and manage the client facility.

- <u>INTEGRATED SYSTEMS</u> (Also known as Turnkey Systems) - An integration of systems and applications software with hardware, packaged as a single entity. The value added by the vendor is primarily in the software. Most CAD/CAM systems and many small business systems are integrated systems. This does not include specialized hardware systems such as word processors, cash registers, and process control systems.

- Integrated systems revenue is divided into two categories:

    - <u>INDUSTRY SPECIFIC</u> systems; i.e., systems that serve a specific function for a given industry sector such as seismic processing systems, automobile dealer parts inventory, CAD/CAM systems, discrete manufacturing control systems, etc.

    - <u>CROSS-INDUSTRY</u> systems; i.e., systems that provide a specific function that is applicable to a wide range of industry sectors such as financial planning systems, payroll systems, personnel management systems, etc.

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• Revenues include hardware, software, and support functions.

• SOFTWARE PRODUCTS - This category includes users' purchases of applications and systems packages for use on in-house computer systems. Included are lease and purchase expenditures, as well as fees for work performed by the vendor to implement and maintain the package at the users' sites. Fees for work performed by organizations other than the package vendor are counted in professional services. There are several subcategories of software products:

  - APPLICATIONS PRODUCTS - Software that performs processing to service user functions. They consist of:

    • CROSS-INDUSTRY PRODUCTS - Used in multiple user industry sectors. Examples are payroll, inventory control, and financial planning.

    • INDUSTRY-SPECIALIZED PRODUCTS - Used in a specific industry sector such as banking and finance, transportation, or discrete manufacturing. Examples are demand deposit accounting and airline scheduling.

  - SYSTEMS PRODUCTS - Software that enables the computer/communications system to perform basic functions. They consist of:

    • SYSTEMS CONTROL PRODUCTS - Function during applications program execution to manage the computer system resource. Examples include operating systems, communication monitors, emulators, and spoolers.

    • DATA CENTER MANAGEMENT PRODUCTS - Used by operations personnel to manage the computer system resources and personnel more effectively. Examples include performance measurement, job accounting, computer operations scheduling, and utilities.

- 131 -

INPUT

. <u>APPLICATION DEVELOPMENT PRODUCTS</u> - Used to prepare applications for execution by assisting in designing, programming, testing, and related functions. Examples include languages, sorts, productivity aids, data dictionaries, data base management systems, report writers, project control systems and retrieval systems.

C.   TYPES OF PROCESSING SERVICES

• Processing services encompass processing services facilities management, remote computing services, and batch services. They are categorized by type of services bought by users as follows:

- <u>Cross Industry</u> services are the processing of applications that are targeted to specific user departments (e.g., finance, personnel, sales) but cut across industry lines. Most general ledger, accounts receivable, payroll, and personnel applications fall into this category. Cross industry data base services where the vendor supplies the data base and controls access to it (although it may be owned by a third party), are included in this category. General-purpose tools such as financial planning systems, linear regression packages, and other statistical routines are also included. However, when the application, tool, or data base is designed for specific industry usage, then the service is industry specific.

- <u>Industry Specific</u> services provide processing for particular functions or problems unique to an industry or industry group. The software is provided by the vendor either as a complete package or as an applications "tool" which the user employs to produce a unique solution. Specialty applications can be either business or scientific in orientation. Industry specific data base services, where the vendor supplies the data base and controls access to it (although it may be owned by a third

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party), are also included under this category. Examples of industry specialty applications are seismic data processing, numerically controlled machine tool software development, and demand deposit accounting.

- Utility services are those where the vendor provides access to a computer and/or communications network with basic software that enables any user to develop its own problem solution or processing system. These basic tools include terminal-handling software, sorts, language compilers, data base management systems, information retrieval software, scientific library routines, and other systems software.

D.   OTHER CONSIDERATIONS

- When questions arise as to the proper place to count certain user expenditures, INPUT addresses the questions from the user viewpoint and categorizes the expenditures according to the answer to: "What do the users perceive they are buying?"

E.   CONTROL DEFINITIONS

- Control. The activity of comparing results with plans and determining the actions necessary to correct discrepancies. It is preceded by the establishment of guidelines such as plans and budgets and followed by management actions.

- Control item. An element of information used in the control process. May be financial data such as revenues or expenses or function data such as sales to

- 133 -

INPUT

support staffing ratio or number of new contracts. It may be a highly specific, discrete unit of information such as revenues or less organized and contain multiple units of information such as lost prospect analysis.

- Control steps. The steps taken in the control process, consisting of:

  - Defining standards. Establishing the criteria used to judge whether or not progress is satisfactory.

  - Measuring progress. Collecting information and applying standards.

  - Evaluating findings. Comparing progress with standards and determining possible causes and corrective actions.

  - Identifying corrective actions. Reviewing alternatives and selecting the most effective or optimum course of action.

- Control process. The array of information and decision support systems, sources of information, and policies and procedures that support the manager in the control activity.

- Marketing. The organization and activities involved in defining the needs of a market, the products to fit the need, and the strategy for creating customers.

- Sales. The organization and activities involved in selling defined products to a defined market.

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APPENDIX B: DATA BASE

APPENDIX B: DATA BASE

A.   LIST OF RESPONDENT COMPANIES

COMPANY	ORGANIZATION INTERVIEWED	REVENUE ($ Millions) ORGAN.	CO.
Anacomp	Processing Services	$12	$107
Ask Computer Systems	Integrated Systems	26	26
Auxton Computer Enterprises	Professional Services	13	13
Cadam Inc.	Software	Conf	Conf
Computer Assistance	Professional Services	15.5	15.5
Computer Data Systems	Professional Services	15	35
Computer Usage	Hybrid (software/processing services)	9	9
Comserv	Software	24	24
Comshare	Processing Services	4	83
Data Medix Inc.	Integrated Systems	20	20
Digicon	Integrated Systems	Conf	163
Electronic Data Systems	Processing Services	Conf	470
Grafcon	Software	1.8	1.8
Houston Data Center	Processsing Services	4.0	4.0
Informatics Inc.	Software	20	150
Information Science Inc.	Processing Services	Conf	20
Litton-Mellonics	Processing Services	Conf	20
The Monchik-Weber Corp.	Professional Services	10	24

INPUT

COMPANY	ORGANIZATION INTERVIEWED	REVENUE ($ Millions) ORGAN.	CO.
The Monchik-Weber Corp.	Hybrid (software/processing services/professional services)	6	24
Management Science America	Software	24	70
NCA Corporation	Software	12.5	12.5
Scientific Calculations Inc.	Integrated systems	20	20
A.O. Smith Data Services	Hybrid (software/processing services)	Conf	10
Softech, Inc.	Professional Services	28	28
Software AG Systems Group, Inc.	Software	34	34
Sterling Systems Inc	Professional Services	7.5	20
Technalysis	Professional Services	6.8	6.8
University Computing Company	Hybrid (processing services/integrated systems)	Conf	119
University Computing Company	Software	Conf	119
University Computing Company	Processing Services	Conf	119

(Note: Conf denotes confidential data)

B. LIST OF RESPONDENT TITLES

- Director (3)
- Division Manager (1)
- Division President (1)
- Executive Vice President (4)
- Executive Vice President and Chief Operating Officer (1)
- Group Vice President (2)
- President (7)
- Senior Vice President (1)
- Vice President (5)
- Vice President and General Manager (5)

(Number of respondents with the given title)

INPUT

C. RESPONDENT-ADDED CONTROL ITEMS

- All control items have been assigned a number to facilitate analysis and reader comparisons.

- Control items listed here were mentioned by respondents and are supplemental to those items shown on the questionnaire.

Control Item Number	Sales
101	Prospect Pipeline
102	Percentage of Pipeline Closed
103	Order Debooking
104	Travel Expense by Organization
105	Number of Clients
106	Average Client Billing
107	New Name Accounts
108	New Account Sales
109	Revenue Increase per Sales Representative
110	Top Client Revenues
111	Cost per Sale
112	Product Revenue Mix
113	Sales Time per Order
114	Sales by Organization
115	Telephone Contacts per Week
116	Number of New Contacts
117	Follow-up Contacts per Week
118	Number of Client Visits
119	Sales Cycle Status
120	Number of Calls per Sales Representative
121	Demonstrations and Benchmarks
122	Bookings by Organization

INPUT

Control Item Number	
123	Expense-to-Bookings Ratio
124	Average Revenue per Sale
125	Percentage of Clients Purchasing Maintenance
126	New Sales Representative Effectiveness
127	Proposed Business Backlog
128	Timing of Sales
129	Prospect Close Strategy or Plan

Marketing

130	Sales Leads by Promotional Source
131	Key Account Satisfaction Survey
132	Seminar Attendance
133	Number of Seminars
134	Number of Inquiries
135	Type of Inquiry
136	Prospect Profile
137	Sales by Promotional Source
138	Clients' Long-Term Plans
139	Quality of Sales Leads
140	Trade Show Leads
141	Lost Business Analysis
142	New Sales Analysis

(Item numbers 143-159 not used)

General and Administrative/Other

160	Profit or Margin by Organization
161	Administration Cost by Organization
162	Expense-to-Revenue Ratio Forecast

INPUT

Control Item Number	
163	Profit per Employee
164	Profit Forecasts
165	Travel Cost by Organization
166	Profit by Client or Sale
167	Salaries
168	Cashflow Projections
169	Expense-to-Revenue Ratios
170	Revenue by Client
171	Revenue Forecasts
172	Staffing and Staffing Plans
173	Employee Morale
174	Profit by Sales Representative

(Item numbers 175-179 not used)

Control Item Number	Support
180	Support Expense as Percentage of Revenues
181	Customer Satisfaction
182	Total Expenses
183	Number of Serious Problems Outstanding
184	Number of Serious Problems Reported
185	Modifications Requested
186	Modifications Completed
187	Time to Respond
188	Problem Backlog
189	Training Backlog
190	Problem Status by Client
191	Support Cost by Product or Service
192	Status of System Installations
193	Nature of Support Calls

INPUT

Control Item Number	
194	Customer Complaints
195	Support-Representative-to-Customer Ratio

(Item numbers 196-209 not used)

Development

210	Total Resources per Project
211	Internal Acceptance Testing
212	Expense as Percentage of Revenue
213	Compliance with Design Specifications
214	Total Costs

(Item numbers 215-239 not used)

Operations

240	System Utilization Trends
241	Service Interruptions per Day
242	Response Time
243	Communications System Uptime
244	Variance from Capacity Plan
245	Job Schedule Performance
246	Peripheral Uptime
247	Operating System Uptime
248	Costs as Percentage of Revenues

(Item numbers 249-270 not used)

INPUT

Control Item Number	Professional Services
270	Personnel Utilization (direct-to-total-labor ratio)
271	Direct Personnel Cost-to-Fees-Billed Ratio
272	Gross Mark-up by Individual
273	Fixed Price Project Status
274	Indirect-to-Direct-Headcount Ratio
275	Management-and-Marketing-to-Professional-Headcount Ratio
276	Billable Time
277	Overhead as Percentage of Salaries
278	Gross Margin by Client, Task, and/or Project
279	Hours Billed and Not Billed

D. MEAN RESPONSES AND NUMBER OF USE MENTIONS

- This section lists the average or mean responses to all control items. It is intended to provide clients with additional data at a level of detail below the grouped responses in Chapter IV.

- The number of mentions shown for each item represents the number of respondents who mentioned using the item.

- Due to sample size considerations, the reader should not assume that all response means shown are statistically representative of a larger population.

Control Item Number	Mean Response	Number of Mentions	Control Item Number	Mean Response	Number of Mentions
1	7.5	15	5	8.5	13
2	4.2	6	6	7.6	12
3	7.2	6	7	9.0	13
4	8.2	20	8	6.5	4

INPUT

Control Item Number	Mean Response	Number of Mentions	Control Item Number	Mean Response	Number of Mentions
9	7.2	13	53	8.2	5
10	6.7	6	54	8.9	7
11	6.6	5	55	8.0	5
12	6.0	4	61	6.0	1
13	5.9	9	101	8.4	11
14	5.8	4	102	10.0	1
15	6.3	4	103	9.0	1
16	0	0	104	5.5	2
17	9.6	20	105	10.0	1
18	7.9	12	106	6.8	4
19	7.5	2	107	8.7	3
20	8.3	8	108	7.0	1
21	6.0	1	109	7.0	1
22	9.6	17	110	8.0	3
23	8.8	12	111	8.0	4
24	6.8	4	112	10.0	2
25	6.1	7	113	9.0	1
26	7.3	6	114	10.0	1
27	8.0	5	115	8.0	1
28	5.7	3	116	8.0	3
29	8.3	3	117	8.0	1
30	8.0	2	118	8.0	3
31	6.4	5	119	9.5	5
32	7.0	3	120	8.8	4
33	9.2	13	121	8.3	3
34	8.0	2	122	8.7	3
35	5.0	1	123	8.5	2
41	9.6	5	124	9.0	2
42	7.3	3	125	8.0	1
43	5.0	1	126	10.0	2
49	9.0	3	127	9.7	3

INPUT

Control Item Number	Mean Response	Number of Mentions	Control Item Number	Mean Response	Number of Mentions
128	10.0	2	182	8.0	1
129	10.0	1	183	9.3	3
130	9.0	3	184	9.0	1
131	9.4	5	185	8.7	3
132	8.0	1	186	10.0	1
133	10.0	1	187	8.5	2
134	8.0	1	188	8.5	2
135	8.0	1	189	9.0	1
136	8.0	1	190	9.0	4
137	9.5	2	191	10.0	2
138	10.0	2	192	10.0	1
139	7.0	1	193	8.0	2
140	7.0	1	194	8.0	2
141	9.0	1	195	9.0	2
142	10.0	1	210	10.0	1
160	9.3	6	211	9.5	2
161	8.0	2	212	10.0	2
162	8.0	1	213	9.0	2
163	10.0	2	214	10.0	1
164	10.0	1	240	7.0	1
165	9.0	1	241	9.0	3
166	9.6	5	242	9.3	4
167	9.3	3	243	9.7	3
168	10.0	1	244	10.0	1
169	10.0	1	245	10.0	2
170	9.0	2	246	9.5	2
171	10.0	1	247	10.0	1
172	9.0	2	248	9.0	1
173	10.0	1	270	10.0	4
174	9.0	1	271	10.0	1
180	8.0	1	272	10.0	3
181	9.3	4	273	10.0	3

INPUT

Control Item Number	Mean Response	Number of Mentions	Control Item Number	Mean Response	Number of Mentions
274	7.5	2	277	10.0	1
275	5.0	1	278	10.0	3
276	10.0	3	279	10.0	1

INPUT

APPENDIX C: RELATED INPUT REPORTS

APPENDIX C: RELATED INPUT REPORTS

- For information on related topics, readers are referred to the following INPUT reports:

    - U.S. Information Services Markets, 1982-1987.

        - Volume I, Processing Services and Integrated Systems, December 1982.

        - Volume II, Software Products and Professional Services, December 1982.

    - ADAPSO Sixteenth Annual Survey of the Computer Services Industry, August 1982.

    - Directory of Leading Information Services Firms - 1982, September 1982.

INPUT

APPENDIX D: QUESTIONNAIRE

1. What are the primary products and markets for your business unit?

    A.   Products   _____

    B.   Markets   _____

2. What were your unit's revenues for the past 12 months and what was their distribution?

    A.   Revenues $ _____

    B.   Distribution

	Percent of Total
Software	_____ %
Processing Services	_____ %
Integrated Systems	_____ %
Professional Services	_____ %
Total	100%

    C.   What were your average number of employees during the past twelve months?

        _____

3. What organizations are in your business unit?

    A.   _____

    B.   _____

    C.   _____

    D.   _____

    E.   _____

    F.   _____

INPUT

4. Performance ratios for the period _____.

	Past 12 Months	Prior Year 1	Prior Year 2

A. Percent Revenue Growth

    Corp.   _____   _____   _____

    Unit   _____   _____   _____

B. Percent Profit Growth

    Corp.   _____   _____   _____

    Unit   _____   _____   _____

C. Profit/Revenue Ratio

    Corp.   _____   _____   _____

    Unit   _____   _____   _____

(Note: Profits are Pre-tax.)

5. How would you rate the effectiveness of the following sources of control information on a 0-10 scale where 10 is totally effective? Please explain any ratings of 5 or less.

Source	Effect	Comments

A. Computer generated financial reports   _____   _____

   _____

B. Manually prepared financial reports   _____   _____

   _____

C. Activity/Progress reports   _____   _____

   _____

D. Formal reviews   _____   _____

   _____

E. Informal reviews (staff meetings, etc.)   _____   _____

   _____

INPUT

6.   Distribution of expenses (most recent 12 months)

Organization	Expense Category	Percent of Revenues
Sales	Total Expenses	
Marketing	Total Expenses	
Customer Support	Total Expenses	
Operations	Total Expenses	
Development	Total Expenses	
General and Administrative	Total Expenses	
Other		

7.   Which organization is the most difficult to control and why?

   A.   Organization: _____

   B.   Reason: _____

   _____

8.   How would you rank your organizations in terms of their importance to your business unit, both short term (under 1 year) and long term (over 1 year)?

	Short Term	Long Term
1.	_____	_____
2.	_____	_____
3.	_____	_____

INPUT

9. What are your key indicators or warnings of long range problems for your organization?

A. _____

B. _____

C. _____

Comments: _____

_____

10. Please indicate if you regularly use the following control items and if so, their importance to you on a scale of 0-10 (where 10 is vital). For any rating of 8 or more, please provide the value or standard used with the item (where applicable).

Please add any control items you consider to be important that we have not mentioned.

(Over)

INPUT

ALL PRODUCT MODES

		Use (Y/N)	Rating (0-10)	Standard/Value or Comments
SALES				
1.	Bookings per sales rep.	_____	_____	_____
2.	Travel expense per sales rep.	_____	_____	_____
3.	Number of orders per sales rep.	_____	_____	_____
4.	Sales forecasts	_____	_____	_____
5.	Quota attainment per sales rep.	_____	_____	_____
6.	Sales by product or service	_____	_____	_____
7.	Key account status	_____	_____	_____
8.	Product mix by sales rep.	_____	_____	_____
	Other	_____	_____	_____
	Other	_____	_____	_____
MARKETING				
9.	Lost prospect analysis	_____	_____	_____
10.	Market Share	_____	_____	_____
11.	Market penetration	_____	_____	_____
12.	Changes in customer profile	_____	_____	_____
13.	Sales leads generated	_____	_____	_____
14.	Cost per sales lead	_____	_____	_____
15.	Promotion cost per product or service	_____	_____	_____
16.	Marketing headcount ratio (to _____)	_____	_____	_____
	Other	_____	_____	_____
	Other	_____	_____	_____

INPUT

		Use (Y/N)	Rating (0-10)	Standard/Value or Comments
G & A/OTHER				
17.	Receivables Aging	_____	_____	_____
18.	Revenue per employee	_____	_____	_____
19.	Overhead per employee	_____	_____	_____
20.	Employee turnover	_____	_____	_____
21.	Sales reps. per sales manager	_____	_____	_____
22.	Cash flow	_____	_____	_____
23.	Profit by product	_____	_____	_____
24.	Hiring cost/New employee	_____	_____	_____
	Other	_____	_____	_____
	Other	_____	_____	_____

SOFTWARE, PROCESSING SERVICES, INTEGRATED SYSTEMS - SPECIFIC ITEMS

		Use (Y/N)	Rating (0-10)	Standard/Value or Comments
SUPPORT				
25.	Calls received per month	_____	_____	_____
26.	Number of problems resolved per month	_____	_____	_____
27.	Time to resolve problems	_____	_____	_____
28.	Travel cost per support rep.	_____	_____	_____
29.	Support reps per sales rep.	_____	_____	_____
30.	Visits per customer	_____	_____	_____
31.	Customers trained per month	_____	_____	_____
32.	Amount of computer resources used	_____	_____	_____
	Other	_____	_____	_____
	Other	_____	_____	_____

INPUT

	Use (Y/N)	Rating (0-10)	Standard/Value or Comments

DEVELOPMENT

33.	Schedule performance	_____	_____	_____
34.	Amount of computer resources used	_____	_____	_____
35.	Personnel turnover	_____	_____	_____
	Other	_____	_____	_____
	Other	_____	_____	_____

PROCESSING SERVICES

OPERATIONS

41.	System uptime or availability	_____	_____	_____
42.	Job re-runs	_____	_____	_____
43.	Disk utilization	_____	_____	_____
	Other	_____	_____	_____
	Other	_____	_____	_____

G & A/OTHER

49.	Inventory	_____	_____	_____
	Other	_____	_____	_____

SALES

53.	Order backlog	_____	_____	_____
54.	Shipments	_____	_____	_____
55.	Number of installs completed	_____	_____	_____
	Other	_____	_____	_____

SUPPORT

61.	Cost per system installed	_____	_____	_____
	Other	_____	_____	_____

INPUT

SOFTWARE – SPECIFIC ITEMS

		Use (Y/N)	Rating (0-10)	Standard/Value or Comments
	SALES			
53.	Order backlog	_____	___154___	_____
54.	Shipments	_____	_____	_____
55.	Number of installs completed	_____	_____	_____
	Other	_____	_____	_____
	SUPPORT			
61.	Cost per system installed	_____	_____	_____
	Other	_____	_____	_____

11. How could your control process be improved?

_____

_____

_____

_____

12. What major changes do you foresee in the way you will control your organization in the future?

_____

_____

_____

_____

INPU

13. How much of your organization's performance would you attribute to the way you control?

    A.   Very much _____

    B.   Much _____

    C.   Some _____

    D.   Little _____

    E.   None _____

Comments: _____

_____

_____

14. Which control items are your personal financial incentives based on?

_____

_____

15. Do you have anything to add or any comments?

_____

_____

_____

_____

INPUT